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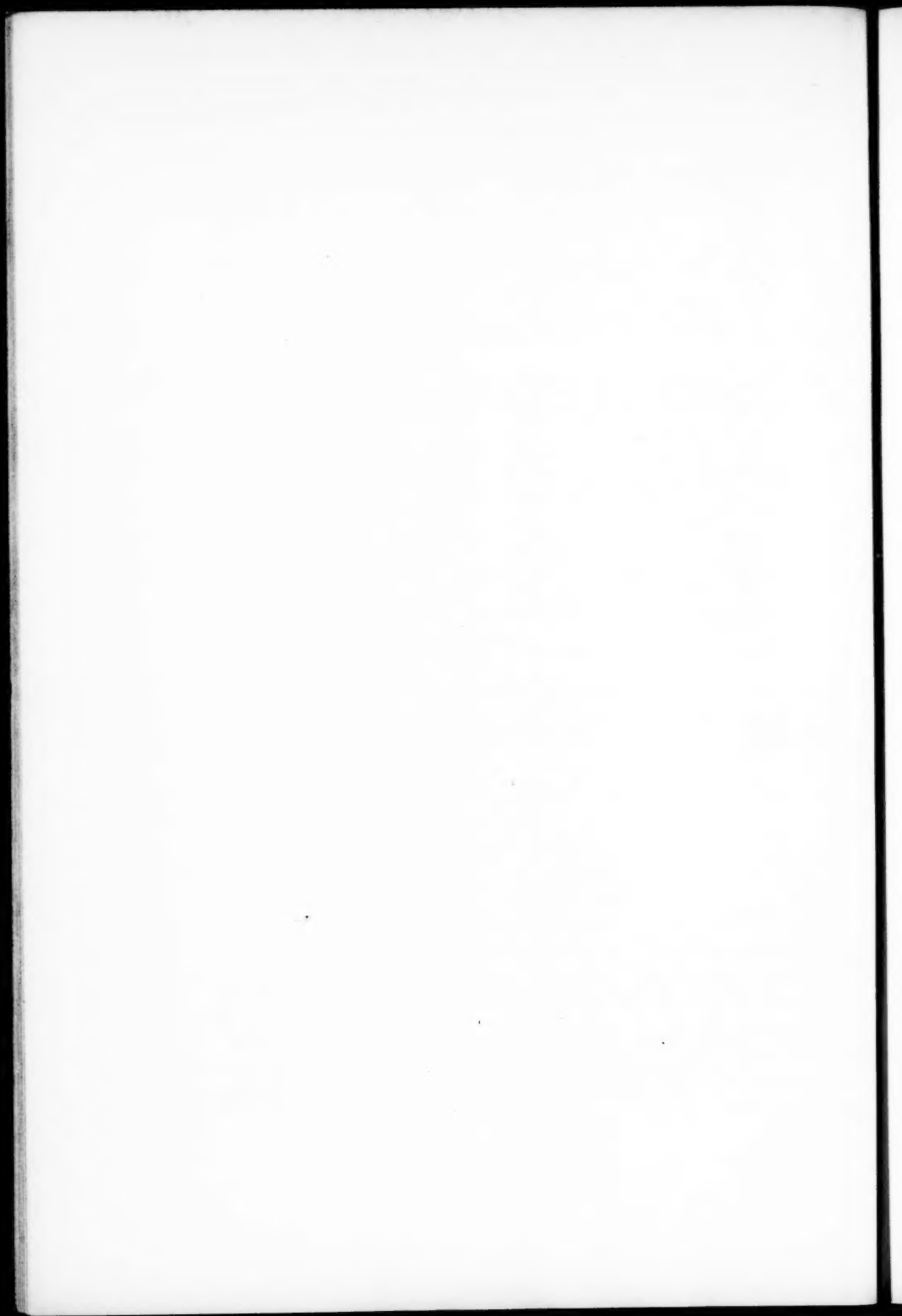
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THE SCHOOL REVIEW

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YOUTH'S CONCEPTIONS OF EDUCATION

The Associated Academic Principals of the state of New York appointed in 1927 a Committee on Secondary School Problems. Since the appointment of the committee a series of studies have been carried out under its direction—studies which aim to lay the foundation for suggestions for organizing and administering secondary education in the state. Among the problems considered has been that of the function of the secondary school. One of the first results of the deliberations of the committee on this subject was a formulation of nine “theses,” a formulation quoted in an earlier issue of the *School Review*.

The results of another project are now in print, having been published as an Educational Monograph of the New York State Teachers Association. The report is entitled *Appraisal of Secondary Education in New York State by Pupils and Former Pupils* and is credited to Warren W. Coxe, director of the Educational Research Division of the New York State Education Department, as author. The bulletin, of more than fifty pages, contains materials on a variety of types of pupil appraisal of the high school, namely, the reasons pupils give for attending high school, for choosing a given curriculum,

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Boston University
School of Education
Library

and for leaving high school; pupil evaluation of high-school subjects, pupil evaluation of cultural aspects of secondary education; the occupational future of high-school pupils and the occupational significance of high-school training as pupils see it; and changes in organization, curriculums, and subject matter suggested by pupils.

In presenting the findings of the study, the committee is under no illusion that from the opinions of pupils can be derived directly a new formulation of objectives of the secondary school. The report states frankly, "The particular value in this approach to the problem is not so much that of finding any new and startling function which the high school should perform, but rather of determining with what clarity high-school pupils understand what the high school will do for them." This aim is in accord with the original plans of the committee to investigate the nature of the pupil body for which the high-school program should be constructed.

The attempt will not be made here to summarize the report in its entirety, but comment will be made on that portion which presents the reasons for attending high school given by almost ten thousand pupils. The evidence is summarized in the accompanying table, which reports the percentages of boys, girls, first-year pupils, and fourth-year pupils indicating certain reasons for attending. In examining the percentages, one is struck, first, by the large proportions of all the four groups indicating as reasons the desire for an education and the desire to prepare for college and, second, by the smaller but still considerable proportions setting down as reasons the social advantages and the desire to prepare for occupations. Comparing the percentages for the different groups, we note that boys more often than girls report preparation for college as the reason, while girls more often than boys report preparation for occupations. First-year pupils more often than fourth-year pupils report desire for an education, while fourth-year pupils more often than first-year pupils report preparation for college. The interpretation in the monograph is that the shift during the interval between the first year and the fourth year toward college preparation as the reason for attendance is accounted for "by the process of selection which has been going on in the high school—those who wish to go on into college remain through the four years and those who do not wish to, drop out

earlier." Perhaps, also, the relative percentages of pupils in the first and the fourth years who report desire for an education and preparation for college as reasons indicate a shift in the plans of the same pupils as their intentions to attend college crystallize and as they near the time of entrance.

The large proportion of pupils giving preparation for college as the reason for attending high school reflects the popular conception of this institution as a preparatory school. Common parlance and the press (at least on the sports page) have adhered to the tradition of dubbing the secondary school the "prep" school, long after public

REASONS WHY PUPILS ATTEND HIGH SCHOOLS

| | Boys | Girls | First-Year Pupils | Fourth-Year Pupils |
|---------------------------------------|-------|-------|-------------------|--------------------|
| Compulsion..... | 2.4 | 2.4 | 2.8 | 1.6 |
| Desire for an education..... | 37.5 | 36.5 | 44.5 | 33.5 |
| For social advantages..... | 11.4 | 14.3 | 13.9 | 13.3 |
| Line of least resistance..... | 0.9 | 1.0 | 1.0 | 0.7 |
| As preparation for college..... | 28.7 | 19.7 | 16.2 | 29.7 |
| As preparation for an occupation..... | 16.5 | 23.9 | 19.8 | 18.2 |
| Not replying..... | 2.6 | 2.2 | 1.7 | 2.9 |
| Total percentage of pupils..... | 100.0 | 100.0 | 99.9 | 99.9 |
| Total number of pupils..... | 4,564 | 4,993 | 1,994 | 2,286 |

high schools, as measured by the proportion of their graduates not going on to college, had become predominantly non-college-preparatory institutions and long after the best schools had, in the interests of the majority of their pupils, abandoned preparation for higher institutions as their chief function. It is unfortunate that large proportions of youth now in high schools should not have been led by the school to look beyond this reactionary and outworn function and to envisage purposes more nearly in accord with modern conceptions.

In some ways the large proportion of pupils positing a desire for an education as the reason for attending high school is as much to be deplored as is the large proportion regarding preparation for college as the major outcome of attendance. Desire for an education as a reason has the serious weakness of being far too general and indefinite. Like preparation for college, it reflects too much the popular attitude and too little the more discerning modern conceptions of the

functions of the school. It is not that we do not commend the desire of youth to be educated. It is, rather, that we suspect them of having exceedingly hazy notions of the whole meaning of education. For this the schools, not the youth, are responsible. We suspect also that this statement of a desire for an education is often intimately associated with attendance for social advantages, ingenuously admitted to be the reason for attendance by a considerable proportion of pupils. Many go to high school—and college as well—largely to escape the stigma associated with non-attendance and for the entrée to social circles they believe will otherwise be closed to them.

A further implication, a bit more remote but nevertheless significant, derives from this large proportion of pupils citing the desire for an education as the reason for attending high school. We have in mind the belief seemingly entertained by these pupils that education is achieved only in schools. Here again we have the reflection of a popular and an all-too-general misconception of the nature and the agencies of education—a misconception which the schools themselves seem at times to encourage rather than to dispel. There is no need to recount here the great host of agencies and means of education outside the school which are available if only youth, while in school, could be made aware of them and inspired to use them after school days are over. We fail too often in school to develop the consciousness of education as a continuing process and to establish intellectual interests and hobbies that persist and grow during post-school years. No matter how large our confidence in formal education, we can hardly doubt that all really well-educated persons have learned more outside of school than in it. How unfortunate, therefore, that hundreds of thousands of even our most capable young people leave school and college each year and promptly break their contacts with intellectual concerns and interests! It may be said in passing that the movement for adult education in its richest meaning will not come into its own until the schools have replaced this stunting conception of education as something achieved only in school by a conception that emphasizes education's dynamic and perpetual character.

The reader will understand that these unfavorable comments do not apply merely to conditions as disclosed in the Empire State.

The situation found to exist there may be assumed to be almost if not quite general in high schools of the country. The prevalence of these conditions should arouse all those at work in secondary schools (and in institutions at other levels as well) to become clear in their own minds as to why we have schools and, having done this, to take the pupils into their confidence concerning the functions of education in the secondary school. Full appreciation of these functions by all immediately concerned should serve as a potent motivation yielding greatly enhanced educational returns.

HIGHER EDUCATION IN MISSISSIPPI REGAINS ITS STRIDE

It will be recalled that a few years ago former Governor Bilbo of Mississippi made political capital of the higher institutions of the state. He did so by removing, through a subservient board of trustees, incumbents of administrative and teaching positions and replacing them with persons of his own choice who were known to be friendly to him. The appointees were manifestly unequipped for their responsibilities. Subsequently the Association of Colleges and Secondary Schools of the Southern States suspended the four institutions concerned from membership in the organization, with consequent serious losses in the prestige and the enrolments of the institutions. Since this action was taken, a new state administration under Governor Conner has entered office in Mississippi and has put into effect an approvable policy touching higher education. The improved situation resulting prompted the association at its recent meeting, after the Executive Committee had recommended approval of the report of the Commission on Institutions of Higher Education, to restore to good standing all four institutions. Following is the report adopted by the association.

At the meeting of 1930 the Association of Colleges and Secondary Schools of the Southern States voted that four specified institutions from the state of Mississippi be suspended from membership until they could secure an educational and non-political administration and until their reinstatement should be recommended to the association by the joint action of the Executive Committee and the Commission on Higher Institutions. Since that time the educational situation in the state of Mississippi has undergone radical changes; a new method of government has been devised for all four institutions, and a new Board of Trustees has been selected. Unfortunately, financial difficulties have made the work of this board difficult and caused it to proceed slowly.

Under these circumstances, the Commission on Institutions of Higher Education has felt it necessary to re-examine the present educational work of all four institutions, as well as consider the specific charges under which the action was taken two years ago. The conclusions reached have met with the approval of the Executive Committee, and this committee now presents its recommendations to the whole association. These recommendations are as follows:

1. That the Mississippi State College for Women be reinstated at the present time unconditionally.
2. That the University of Mississippi be reinstated at the present time, with a footnote reading as follows: "On account of financial difficulties, not now fully meeting one or more of the standards."
3. That the Mississippi State College (formerly the A. & M. College) and the State Teachers College at Hattiesburg be reinstated at the present time on probation pending further improvements in educational work and more complete compliance with the requirements of this association.
4. That further procedure in these cases be in the hands of the Commission on Institutions of Higher Education, according to existing rules and regulations of the association.

Both Mississippi and the Southern Association are to be congratulated, the one on the successful eradication of the menace to higher education and the other on the educational statesmanship shown in handling a difficult and embarrassing problem. The outcome demonstrates the value of standardization of educational institutions over areas wider than those inclosed by state boundaries.

TRENDS IN SECONDARY EDUCATION FOR NEGROES

The Phelps-Stokes Fund has for more than two decades fostered the interests of negroes. Attention has been given chiefly to education and interracial co-operation. Its *Twenty Year Report*, recently published, contains a series of studies of negro progress and of developments of race relations in the United States and Africa during the period. One of the studies is by Thomas Jesse Jones, the Fund's educational director, and deals with trends in negro education in this country from 1915 to 1930. The study covers all levels and types of education, but we quote only the section dealing with secondary education. An astonishing and gratifying numerical growth is recorded.

The very rapid advance of provisions for the secondary education of the negroes in the southern states is very difficult to measure. In 1915 there were about 70 public high schools, of which 45 offered four-year courses. These schools had a total attendance of about 30,000, of whom only 9,000 were of high-school

grade. The number of teachers for both elementary and secondary pupils was about 485. In addition there were about 200 schools enrolling a few pupils above the elementary grades. There were also 216 private schools maintaining secondary classes, of which 106 offered four-year courses. The total number of colored secondary pupils in the southern states was approximately 25,000, of whom 12,000 were in private schools, 9,000 in public high schools, and 4,000 in state and federal institutions. At that time in proportion to population there were ten times as many white pupils in public high schools as colored pupils. The inclusion of the private-school attendance for both races changes the ratio so that the proportion of white secondary pupils was five times that of the colored pupils.

According to the Negro Year Book for 1931-32 there are about 1,000 public high schools for negroes in the southern states. In addition there are about 160 private high schools and academies with a total enrolment of about 33,000, of whom 11,000 are in high-school classes. The estimated enrolment of negro pupils of secondary grade in all types of schools is probably about 200,000. Unfortunately it is not possible to give an accurate evaluation of secondary instruction offered in these schools of varying grades and standards. It is important to note that the 1,000 high schools reported by the Negro Year Book include both city and county schools, the latter commonly designated as County Training Schools—the schools for which the Slater Fund has done so much—and also that no differentiation has been made between high schools of junior and senior grade. Some idea of the extent and quality of secondary education may be obtained from statistics presented by the United States Office of Education for 508 high schools reporting in 1927-28. Of these schools 272 reported fourth-year classes with a total of 7,100 graduates, of whom 2,360 were boys and 4,740 were girls. In the 508 schools there were 3,285 teachers, of whom 1,846 were in regular high schools, 76 in senior high schools, 987 in junior-senior high schools, and 376 in junior high schools. The federal Office also reported almost 95,000 pupils in the four-year high schools of the eighteen southern states. These schools had a total of about 4,000 teachers, of whom 2,300 were women. The public high schools including both senior and junior were reported to have 165,000, of whom 103,000 were girls. The private high schools reported in the same bulletin had an enrolment of about 10,000 pupils. The total number of secondary teachers in the negro high schools of the eighteen southern states according to federal statistics were reported to be about 5,000, of whom over 4,000 were in public high schools and about 700 in private schools.

Comparing these rather unsatisfactory statistics for both 1915 and 1930 the extent of progress may be approximated as follows:

1. That the number of negro high schools of all types and grades in the southern states has increased from less than 100 in 1915 to about 1,000 in 1930.
2. That the pupil enrolment has increased from about 25,000 in 1915 to more than 200,000 in 1930.
3. That the increases along all lines have been almost exclusively in public

high school facilities. The number of secondary pupils in private schools seems to have decreased from about 15,000 in 1915 to about 10,000 in 1930, whereas the number of secondary pupils in public high schools has increased from less than 10,000 to more than 175,000.

4. That the actual increase and improvement in secondary education for negroes in the southern states are somewhat exaggerated by the available statistics presented above. It is especially important to note that despite the remarkable advancement less than 5 per cent of the negro school enrolment in the southern states is of high-school grade, whereas the percentage of white secondary pupils is about 15 per cent. In view of the importance of secondary education in the training of teachers and in the general community development of the negro pupil, it is most important that every effort should be made to continue the remarkable progress of the last fifteen years.

A HIGH-SCHOOL COURSE IN STATISTICS

In the October number of *High Points in the Work of the High Schools of New York City* Thomas Munro describes a course in statistics as it is being taught in the High School of Commerce in New York City. The course is a half-year unit intended to familiarize the pupil with the elements of statistics, special emphasis being placed on its application to business. The subject is elective in the "business course" but is required in the "banking and insurance" division of that course. The six units or main topics of the course are: (1) construction and interpretation of graphs, (2) the general nature of statistical investigation and methods of attack, (3) measures of central tendency, (4) measures of dispersion, (5) analysis of time series, and (6) miscellaneous topics (logarithms, simple and weighted averages—especially weighted index of cost of living, use of cost-of-living index for purpose of salary comparisons from year to year, and business barometers). The description of the course indicates that the study of the topics affords many opportunities for the discussion of the social and economic significance of the data, as well as for their statistical analysis.

The following are the objectives of the course.

1. To make the student familiar with the meaning of such statistical terms as he is likely to meet in his study of economics and in his reading of the daily press. (Examples: index numbers, trend, seasonal, variation, correlation, average, median, deviation, etc.)
2. To enable the student to read and interpret such graphs as are commonly seen in the newspapers, periodicals, business and scientific magazines, etc.

3. To make the student familiar with the more common methods of computing the "business index" for determining the present state of business conditions.

4. It is expected that the considerable amount of computational work required in carrying out many of the processes described above will serve to develop the pupil's ability to compute accurately.

5. Akin to all courses which students take, a statistics course such as the one here outlined should make the pupil a little more enlightened than he would be had he not taken the course. We feel that the time which he has spent will be justified if the student goes through life a little more intelligently and a little better able to understand some of the statistical expressions which are becoming more and more common in the vocabulary of business and science.

This course has for some years had its approximate analogue in departments of economics and business in higher institutions, and it is not unlikely that these older courses served as a precedent. This development at the secondary level of courses formerly given only in the college has been going on for more than a century. One can hardly deny the value of a special course of this kind to pupils in a high school of commerce or in commercial departments in other high schools. Some value in taking the course would, as may be inferred from the statement of objectives, accrue to pupils in non-commercial curriculums. The issue is not whether much of the content outlined is valuable for all regardless of occupational plans. The issue rather is whether, for the non-commercial pupil, this content should be made available in a separate course or whether it should be developed and applied in other courses already offered, such as mathematics and the social studies. The preference would seem to be for the second arrangement.

PRIVATE BOARDING SCHOOLS EXPERIENCE SOME LOSSES IN ENROLMENTS

The *New York Sun* reports the results of an inquiry made during the autumn into conditions of attendance in private boarding schools. We quote the report in full.

The average attendance in private boarding schools and colleges throughout the country this fall is 5.3 per cent less than last year, according to reports from 322 institutions to N. W. Ayer and Son. The Ayer analysis, based on the enrolment of 73,198 students, shows that the average school is 84 per cent filled, as compared with 89 per cent a year ago.

The reports indicate that schools and parents are co-operating to an unusual degree in an endeavor to give young people an education. Boarding schools in

many cases have cut their rates, and others have offered scholarships or have told parents that they could pay as much as they can and forward the balance when they are able. Some colleges are accepting honey, eggs, potatoes, and other products in lieu of cash for board and room.

Coeducational college-preparatory schools have suffered a 5 per cent drop from a year ago, while eighty-nine boarding schools for girls show a decline of 5.5 per cent. Of these eighty-nine schools, nine have a larger attendance than a year ago. Fourteen boys' preparatory schools have a larger total attendance than last year, although the drop in enrolment of seventy-two such schools is 8 per cent. Figures gathered from fifty military schools show an average decline of 14 per cent, although six of these schools have a larger attendance than a year ago.

The Ayer report shows that New England institutions are in a better condition than are schools in the rest of the country. Twenty-six per cent of fifty New England schools considered are 90 per cent or more filled. This compares with 17 per cent of schools in the North Atlantic states and 46 per cent for the same New England schools a year ago. Schools in the southern states are better off this year than last in comparison with those in the Middle West and North Atlantic division, although only 16.7 per cent are 90 per cent or more filled.

The report points out that schools which have a capacity for one hundred or more pupils are in better condition than slightly smaller schools. There seems to be a trend toward larger schools.

Vocational schools indicate a slight increase in enrolment over last year.

Because in an inquiry of this character schools with the greatest losses are less likely to submit reports than schools making gains or holding their own, it may be that the situation for all schools of the type is somewhat less favorable than for those represented in this analysis. The loss in private boarding schools contrasts with the gains in public schools. It is unfortunate that public agencies of education should have increased responsibilities at a time of retrenchment when they are less able to assume them.

AN INFORMATIVE STUDY OF THE JUNIOR HIGH SCHOOL LIBRARY

School workers interested in improving library service will do well to keep in touch with the *School Library Yearbooks* of the American Library Association. The fifth of these yearbooks, recently published, is notably helpful. Besides the usual directory of officers, committees, and members, the current issue contains parts devoted to library standards for schools at the different levels, studies and de-

scriptions of the school-library situation, and a bibliography on school libraries covering items published during the four-year period prior to June, 1932.

Among the studies reported is a survey of the junior high school library by Howard H. Hicks, principal of the Alexander Hamilton Junior High School, Long Beach, California. The treatment reports on many aspects of the library and its service, such as objectives for librarians, teachers, and supervisors; reading characteristics of pupils; library rooms and equipment; circulation; attendance; administration; pupil instruction; and library staff and load. We can quote only the author's recommendations.

1. The junior high school library should be more widely recognized in educational literature and practice as a separate field of work. The junior high school library has distinct and separate problems.

2. All educators in the junior high school field should understand the library and its relations to their work. Each junior high school educator—teacher, librarian, and principal—should have definite educational objectives that are related to the child's educational experience in the library.

3. The junior high school library should consistently serve the entire school. There is much to be accomplished before this goal is attained.

4. A co-operative effort is essential to the success of the junior high school library. It is by nature an integrated institution that requires the co-operation of all educators concerned. This requires more interest in the library on the part of many teachers and administrators.

5. The school administrator would find it profitable to study library use in his junior high school. It seems to be the only way of determining the amount of library experience children are securing.

6. New library standards should be evolved or formulated. These standards should be based upon modern school philosophy, objectives, and practice.

7. The load of the junior high school librarian should be determined by the evaluation of library service. This should be based upon data which are the out-growth or result of service rendered.

8. The librarian should spend most of her time in doing professional work which requires special library skill and experience. It is in the interest of economy and library efficiency to have other routine work done by clerical help.

TIMELY DISCUSSIONS OF EDUCATIONAL PROBLEMS OF THE DEPRESSION

Two brief editorials in the *University of Michigan School of Education Bulletin* for November are so timely as to prompt quoting both in full. The first, entitled "Conserving Educational Progress," is by

Professor Edgar G. Johnston and contains sound admonishment against letting go, in the current efforts at retrenchment, of recent gains made in the program of the schools.

It is inevitable and appropriate that schools should share the common lot and that expenditures for education should be reduced during the present emergency. It is of vital importance, however, that economies be so planned as to minimize the resultant injury to pupils in the schools and to the society whose welfare schools are designed to serve. The decision here is one for experts and not for laymen. It is the public's right to determine how much it can pay for schools. It is the responsibility of school people to decide where the necessary economies can be made with the least serious results and to keep the public informed as to what these results are.

It is important not to allow ourselves to be hurried into false economies and foolish retrenchments. Looking at the little red schoolhouse through the glamorous haze with which reminiscence envelops it, some otherwise realistic business and professional men are urging us to go back to the school of 1890 and to discard "the fads and frills" which occasion mounting school taxes. They would not discard the results of research in industry or the aids to diagnosis which modern science has provided in matters of health. It would be equally foolish and dangerous to discard educational advances which make the school more adequate to the demands of a new day.

It is disheartening to learn that some schools in their efforts to meet the demands for economy in the school budget are eliminating provisions for individual counseling, discontinuing extra-curriculum activities or leaving their development to chance, eliminating art and music, shop and home-making, in an effort, as they think, to reduce the curriculum to its essentials.

What is needed is a redefinition of essentials. The practice in sharing responsibility which represents the best preparation any education can give for citizenship in a democracy; the widening of individual horizons through courses adapted to the varied interests of present-day high-school pupils and the needs of modern life; wholesome recreational interests which may contribute toward a better adjusted and more self-reliant personality; provision for health and physical development; guidance among the educational offerings of the school and in occupational choice; provision for the study and prevention of personal maladjustment—all these represent significant values which the school cannot afford to lose. If these values are to be achieved, there must be provision for their attainment.

It would be refreshing to hear of a school which, compelled to eliminate some courses, has temporarily discontinued some of the advanced college-preparatory courses in order to maintain its guidance program, its classes in art and music, and its vocational offerings. We ought to provide during this emergency the services that will meet the needs of the largest number. If there must be omission, it is well to postpone those courses which must be presented chiefly in order

to meet college-entrance requirements. Especially since recent studies indicate little relation between college success and the pattern of high-school subjects, it would seem appropriate under an economy régime to allow the college to provide such specific preparatory elections as it requires.

Two types of emphasis have begun to emerge most clearly as obligatory on the modern school: first, a more realistic facing of the world in which youth must live and, second, a more discriminating and intelligent study of individual qualities, interests, and abilities. A beginning has been made in the recognition of these responsibilities, and it is in this time of crisis that we can least afford to turn our backs upon them.

The second editorial, by Professor Katharine B. Greene, carries the warning caption "Children in Danger." In it Professor Greene first calls attention to the deplorable effects of malnutrition. She does not, however, stop with this warning but, quite properly, goes on to emphasize the ravages of psychic disorganization that must accompany the physical deprivations to which many discussions of the subject are limited.

The period of constriction and deprivation through which we are now passing has two very bad results on children. It results in physical malnutrition and in fear, both of which are hindrances to good growth and to the development of potential strength in the child. While they are not universal, they are far more widespread than is generally thought.

Malnutrition may be caused by an utter lack of foodstuffs or by the wrong kind of food. Children are going hungry, becoming dazed, sullen, irritable, or rebellious, and building personality patterns that are of grave consequence for their later lives. Others are reduced not through direct starvation but because restrictions in diet imposed by economically stricken parents or by food-distribution bureaus are not always wise; too often a costly article of food is eliminated while no attempt is made to find a cheaper substitute. As a result the children's interest is at a low ebb, with low vitality, and they are hard to arouse to good activity with sustained attention. Children in states of weakened resistance are peculiarly liable to disease, so that our schools may well expect to have more absences and longer periods of convalescence.

For both these groups of malnourished, physical injury for the future is probable since teeth and bony structure suffer, and perhaps the nervous system also. We know what happened to European children during the starvation period at the end of the war. Now that it is happening in peace to ours, we can expect similar results in stunted bodies and lowered vitality.

Family fear works an incalculable injury, for children need security and a safe retreat from which they emerge to tilt with dragons of a fitting size, so learning to depend on themselves as victory gives them confidence. In a time of uncertainty the retreat is no longer safe. Children whose parents are actually receiv-

ing as a charity what they cannot earn, who see the last vestiges of property and personal independence slipping away from the family, suffer from insecurity. In very casual families to whom one fate is as good as another, this may not be true. But for most American families the loss of all financial integrity, precarious though it may have been, is a cataclysm. The breadwinners are horrified at their impotence and bored with their leisure. The yeastly compound of dissatisfaction makes them querulous and hard to live with. Their fear and inability to earn oppress the child directly. Such children do not know which way to turn. Parental dignity no longer exists as a protection.

Children do not thrive under fear. They are pinched and distressed and lose the ability to develop freely. They may become permanently blighted. Fear renders children uncertain, mistrustful where trust is needed for co-operation in schools and all socially wise groups.

Nor are those who suffer actual depression the only ones who suffer. *Middletown* portrays the drain of occupational uncertainty even in good times. In bad, the feeling spreads and rises to a panic. The dread of joblessness may be worse than actual want.

An economic order which does not plan wisely to avoid such hardships for its own members cannot be a lasting order. Individual efforts should be well rewarded, but to preserve a system which gives rewards, those who succeed must give a fair start to all those who will later strive. Children must be given their full growth if America is not to slip back into a feudalism of misery for the masses and empty glory for the mighty.

A CORRECTION

In the December number of the *School Review* a prospectus of the lists of selected references was published. Through error, the address of Beulah I. Coon, who will prepare the list of references on home economics for the *Elementary School Journal*, was given as the University of Minnesota. Actually Miss Coon is employed as the agent for studies and research, Home Economics Education Service of the Federal Board for Vocational Education, Washington, D.C.

THE JUNIOR HIGH SCHOOL MOVEMENT, IN THE YEAR 1930

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The National Survey of Secondary Education included among its projects a study of current tendencies in secondary-school organization. The study in question sought to discover the effects of the junior high school movement upon practice in school organization, to secure objective evidence as to the comparative merits of reorganized and conventionally organized secondary schools, and to provide a basis for estimating the relative promise of various types of junior and senior high schools. A brief summary of the major findings of this study has already been published.¹ Data obtained from the study concerning the effect of the junior high school movement on practices in the seventh, eighth, and ninth grades have also been published.² Certain further data are of sufficient general interest to warrant presentation in advance of the detailed report of the study as a whole.³ In particular, the facts concerning the present status of the junior high school movement and concerning the direction in which that movement has been tending in recent years merit widespread attention. The present article sets forth the more important

¹ F. T. Spaulding, "The Reorganized Secondary School," *Harvard Teachers Record*, II (October, 1932), 170-78.

² F. T. Spaulding, "Is the Junior High School Organization Superior to the Conventional Organization? A Report on Nation-wide Practice," *Proceedings of the Sixteenth Annual Meeting of the Department of Secondary-School Principals*, pp. 208-29. Bulletin of the Department of Secondary-School Principals, No. 40. Cicero, Illinois: Department of Secondary-School Principals of the National Education Association (H. V. Church, Secretary), 1932.

³ A complete report of the study will appear as a part of Monograph No. 5, *Reorganization of Secondary Education*, in the series of monographs comprising the report of the National Survey of Secondary Education to be issued shortly by the United States Office of Education.

of these facts as they are revealed in data gathered by the National Survey for the school year 1929-30 concerning secondary schools for white pupils throughout the United States.

NUMBERS OF PUPILS ENROLLED IN REORGANIZED SCHOOLS

The most significant single index of the status of reorganization is probably to be found in the grade-by-grade enrolments of reorganized schools as compared with corresponding enrolments in conventionally organized 8-4 schools. To secure such an index is difficult because both reorganized and conventional schools are found in eleven- and thirteen-grade systems as well as in the usual twelve-grade systems. The difficulty may be met, at least partially, by including the six upper grades under the same headings whether these grades are in eleven-, twelve-, or thirteen-grade systems. Table I shows proportionate grade-by-grade enrolments in conventional schools and in various types of reorganized schools according to this scheme. For the purposes of the table the enrolments for the last grade of high schools in eleven- and thirteen-grade systems have been interpreted as enrolments in the twelfth grade, and lower-grade enrolments have been correspondingly moved up or down.

The fact most immediately evident from this table is that the pupils enrolled in conventional elementary schools and four-year high schools still outnumber the pupils enrolled in the corresponding grades of reorganized schools by approximately two to one. In 1929-30, 67.9 per cent of the pupils enrolled in the six upper grades of the public-school system were in conventionally organized schools; 32.1 per cent were in junior or senior high schools. That no larger proportion of the school population has been directly affected by reorganization is hardly a cause for discouragement. On the contrary, the fact that within the space of approximately twenty years the movement for reorganization has touched as many as one-third of the pupils whom it was intended to reach is indeed remarkable. The figures give some evidence, nevertheless, of how far the movement has yet to go before reorganized schools will have supplanted the traditional form of organization.

Table I shows further that reorganized schools accounted in 1929-30 for a larger proportion of the pupils enrolled in the ninth through

TABLE I
PERCENTAGES OF WHITE PUPILS IN GRADES 7-12 IN VARIOUS TYPES OF SCHOOLS IN 1929-30*

| TYPE OF SCHOOL | PERCENTAGE OF PUPILS IN GRADE† | | | | | | |
|---|--------------------------------|-----------|-----------|-----------|-----------|---------|---------|
| | 7-12 | 7 | 8 | 9 | 10 | 11 | 12 |
| All types (number)..... | 7,724,566 | 1,920,385 | 1,787,652 | 1,400,489 | 1,102,284 | 829,061 | 666,695 |
| All elementary, all regular high schools..... | 67.9 | 72.9 | 71.4 | 62.2 | 64.9 | 65.0 | 64.8 |
| All reorganized schools..... | 32.1 | 27.1 | 28.6 | 37.8 | 35.1 | 35.0 | 35.2 |
| Reorganized schools: | | | | | | | |
| 7-9 junior, 10-12 senior..... | 16.1 | 15.2 | 15.6 | 19.4 | 15.6 | 15.2 | 15.2 |
| 7-8 junior, 9-12 senior..... | 2.1 | 1.8 | 1.9 | 2.1 | 2.2 | 2.3 | 2.4 |
| 6-8 junior, 9-11 senior..... | 1.1 | 0.7 | 0.8 | 1.0 | 1.6 | 1.6 | 1.6 |
| Other junior, other senior high schools..... | 0.7 | 0.7 | 1.1 | 1.1 | 0.6 | 0.3 | 0.3 |
| All junior, all senior high schools..... | 20.0 | 18.4 | 19.4 | 23.6 | 20.0 | 19.4 | 19.5 |
| 7-12 undivided 6-year schools..... | 4.8 | 3.7 | 3.8 | 5.5 | 5.8 | 6.0 | 6.1 |
| 8-12 undivided 5-year schools..... | 0.2 | 0.0 | 0.2 | 0.4 | 0.4 | 0.4 | 0.4 |
| 7-9 and 10-12 junior-senior..... | 4.4 | 3.2 | 3.2 | 5.0 | 5.6 | 5.6 | 5.6 |
| 7-8 and 9-12 junior-senior..... | 2.2 | 1.6 | 1.6 | 2.7 | 2.7 | 2.9 | 3.0 |
| Other 5-year and 6-year schools..... | 0.5 | 0.2 | 0.4 | 0.6 | 0.6 | 0.7 | 0.6 |
| All 5-year and 6-year schools..... | 12.1 | 8.7 | 9.2 | 14.2 | 15.1 | 15.6 | 15.7 |

* Read this table as follows: Of the 1,920,385 white pupils in Grade 7, 72.9 per cent are in elementary schools and 27.1 per cent are in reorganized high schools. This 27.1 per cent is the sum of the 16.4 per cent of pupils in all junior and senior high schools and the 8.7 per cent in all five-year and six-year schools.

† Grades in eleven-grade systems are moved up one grade and grades in thirteen-grade systems down one grade to conform with this classification.

the twelfth grades than of the pupils enrolled in the preceding grades. This fact may possibly indicate a greater holding-power on the part of the reorganized schools than on the part of the conventional schools. The relative gain in enrolment in the lower grades of the reorganized schools, however, would seem to be chiefly due to transfers of pupils from conventional schools—as, for example, from the seventh to the eighth grade of school systems which do not begin secondary-school work before the eighth grade. The absence of gain in the three upper grades is noteworthy. Transfers of pupils from one type of school to another are infrequent in these grades, and the transfers which occur are quite as likely to take place from reorganized schools to conventional schools as in the opposite direction. The fact that the proportionate enrolment of the reorganized schools remains constant at about 35 per cent in the three upper grades suggests that reorganized and conventional schools exercise about the same degree of retention at this point. What is true for the upper grades may not, of course, hold true for the lower grades as well; yet, in view of the obvious possibility of explaining shifts of enrolment in terms of transfers, the figures here presented give no substantial support to the assumption that reorganized schools have extraordinary virtues in the matter of retention.

Finally, Table I shows that wide variations exist in the proportions of pupils enrolled in special types of reorganized schools. From the beginning the movement for reorganization has had the effect of producing a variety of grade groupings. The abandonment of the 8-4 system has usually meant the adoption of one of three main types of reorganization, namely, the separate junior high school followed by a separate senior high school, the five- or six-year high school in which junior and senior high school grades are combined as a single unit, and the five- or six-year school in which junior and senior grades are treated as distinct units. Within these three types the length of the separate units has varied extensively. Table I shows enrolments according to the most common grade groupings. The table indicates that, of the numerous varieties of reorganized schools, only the separate three-year junior and senior high schools have become widely enough established to deal with any large proportion of the secondary-school enrolment. No other single type of reorganized

school enrolls more than one in twenty of the total number of pupils in the grades which it includes, and certain types of schools enrol fewer than one in a hundred. Table I shows also that, among the reorganized schools themselves, the first main type of reorganization is clearly predominant. Separate junior and senior high schools, as contrasted with various forms of five- and six-year schools, account for approximately two-thirds of the reorganized-school enrolments in the three lower grades and for well over half the enrolments in the upper grades.

THE GEOGRAPHICAL SPREAD OF REORGANIZATION

The movement for reorganization has affected various sections of the country in different ways and in different degrees. Table II, in

TABLE II

PERCENTAGES OF SECONDARY SCHOOLS IN FIVE PRINCIPAL SECTIONS OF THE UNITED STATES WHICH WERE REORGANIZED SCHOOLS AND PERCENTAGES OF SECONDARY-SCHOOL PUPILS ENROLLED IN REORGANIZED SCHOOLS IN 1929-30

| Section | Percentage of Schools | Percentage of Pupils |
|-----------------------------|-----------------------|----------------------|
| New England..... | 48 | 60 |
| Middle Atlantic States..... | 31 | 45 |
| Southern States..... | 24 | 44 |
| Middle Western States..... | 24 | 51 |
| Western States..... | 27 | 52 |
| United States..... | 26 | 49 |

which are shown the percentages of reorganized schools compared with the total numbers of secondary schools and the percentages of all secondary-school pupils enrolled in reorganized schools in 1929-30, provides a rough measure of the varying effects of the movement. In this table proportionate enrolments have been computed in terms of *high-school* enrolments only, not in terms of enrolments for all six upper grades; consequently the place occupied by the reorganized schools appears somewhat greater than that indicated by the figures in Table I.

In the United States as a whole practically half the pupils classified as secondary-school pupils are enrolled in reorganized schools, though only one-fourth of all secondary schools can be classed as junior or

senior high schools. Among the five principal sections of the country, New England leads both in the proportion of pupils affected and in the proportion of schools reorganized. The western states rank second as a group in the proportion of high-school pupils enrolled in reorganized schools, though only third in the proportion of schools affected. The Middle West and the Middle Atlantic sections occupy

TABLE III
NUMBERS OF SECONDARY SCHOOLS OF VARIOUS TYPES IN FIVE PRINCIPAL
SECTIONS OF THE UNITED STATES IN 1929-30

| Type of School | United States | New England | Middle Atlantic States | Southern States | Middle Western States | Western States |
|---|---------------|-------------|------------------------|-----------------|-----------------------|----------------|
| Junior high schools: | | | | | | |
| *Grades 7-9 | 1,288 | 159 | 273 | 232 | 426 | 198 |
| *Grades 7-8 | 204 | 41 | 15 | 13 | 105 | 30 |
| *Grades 7-10 | 196 | 9 | 37 | 115 | 18 | 17 |
| Other junior schools | 99 | 4 | 5 | 81 | 4 | 5 |
| Junior-senior and undivided high schools: | | | | | | |
| *3-3 plan junior-senior | 936 | 17 | 139 | 311 | 405 | 64 |
| *2-4 plan junior-senior | 637 | 42 | 62 | 76 | 378 | 79 |
| *Undivided 6-year schools | 1,446 | 76 | 169 | 493 | 654 | 54 |
| Other junior-senior and undivided schools | 170 | 6 | 8 | 105 | 41 | 10 |
| Senior high schools: | | | | | | |
| *Grades 10-12 | 454 | 57 | 76 | 49 | 189 | 83 |
| *Grades 9-12 | 142 | 30 | 4 | 8 | 80 | 20 |
| Other senior schools | 47 | 2 | 0 | 39 | 3 | 3 |
| All reorganized schools | 5,619 | 443 | 788 | 1,522 | 2,303 | 563 |
| All regular high schools | 15,903 | 476 | 1,745 | 4,862 | 7,261 | 1,559 |
| All secondary schools | 21,522 | 919 | 2,533 | 6,384 | 9,564 | 2,122 |

* Schools in twelve-grade systems.

the third and fourth positions, respectively, in terms of the percentages of their pupils in reorganized schools. The southern states, which rank last in both measures, are noteworthy for their variations in extent of reorganization. When the forty-eight states are considered separately, the three states most affected (Alabama, Florida, and Arkansas) and the three states least affected (North Carolina, South Carolina, and Louisiana) are found in the South.

A more detailed view of the varying effects of reorganization is presented in Table III. In this table are listed the numbers of reorganized schools of various types reported to the United States Office of Education in 1929-30. Each type of reorganized school

which included one hundred or more representatives in the United States as a whole is separately listed. The table shows the distribution of these schools by sections of the country. The fact that only eight types of schools are represented by as many as one hundred separate organizations deserves some emphasis. In the order of their frequency, these eight are undivided six-year schools, three-year separate junior high schools, 3-3 and 2-4 junior-senior schools, three-year separate senior high schools, two-year and four-year separate junior high schools, and four-year separate senior high schools. All other types of reorganized schools together include fewer schools than any one of the types just mentioned except the two-year and four-year junior high schools and the four-year senior high schools.

In the United States as a whole undivided five- and six-year schools and junior-senior high schools together outrank the remaining types of reorganized schools by more than six to five. In the Middle Atlantic states, the southern, and the middle western states the proportionate numbers of combined schools are even greater. Only in New England and the western states are separate junior and senior organizations the more numerous. The numerical predominance of the combined schools is of particular interest in the light of the data on relative enrolments presented in Table I. Despite the fact that individual junior-senior high schools and undivided schools together outnumber all others, the combined enrolments of these schools hardly more than equal the enrolment of the three-year junior high schools alone.

Table III indicates clearly that, as between the 6-3-3 and the 6-2-4 plans of organization, the former is the more favored. If undivided six-year schools are considered parts of a 6-3-3 system, this system appears as the predominant scheme of organization, not merely in the United States as a whole, but in each of the five principal sections of the country as well.

The data presented in Table III, like those set forth in Table II, make it clear that the geographical spread of reorganization cannot be accurately described without taking account of wide variations in various parts of the country. The tendency toward variation is in itself obviously characteristic of the general movement for reorganization. The small number of different types of reorganized schools in extensive use, the numerical predominance of combined schools over

separate junior and senior high schools, and the overwhelming preference for the 6-3-3 as contrasted with the 6-2-4 plan of organization—these, however, represent characteristics which are perhaps no less significant than the more obvious characteristic of variation.

THE SIZE OF REORGANIZED SCHOOLS

As may be inferred from the statistics which have already been presented, reorganized schools tend, in contrast with conventionally organized four-year high schools, to be relatively large schools. The distribution of the schools of the various major types according to their total enrolments is presented in Table IV. Examination of this table will show that, of all the conventionally organized high schools in the United States, two out of every three in 1929-30 enrolled fewer than one hundred pupils. Of the total number of reorganized schools, fewer than one in five had enrolments of less than one hundred, and nearly three in every five enrolled more than two hundred pupils. The percentage of "regular" high schools enrolling fewer than fifty pupils is almost seven times the corresponding percentage of reorganized schools, while the percentage of reorganized schools enrolling more than a thousand pupils is nearly five times the corresponding percentage of "regular" schools.

Among the reorganized schools themselves, the three-year senior high schools and the three-year junior high schools tend to be the largest. Next in order of size come four-year senior high schools and two-year junior high schools. Junior-senior high schools tend to cover the whole range of enrolment groups, though, like the separate schools, the junior-senior schools are more frequently represented in the upper groups than in the lower. The undivided six-year schools likewise tend to appear in all the enrolment groups, but these are more frequently small schools than are the junior-senior schools. The smallest schools among the classified types are in general the four-year junior high schools. Among the schools grouped as "other" organizations, the tendencies are in the main similar to those noted for the principal types of separate and combined schools.

Table IV suggests, but does not itself clearly illustrate, a fact that is of some importance in interpreting the sizes of the various types of schools—the fact that the average school of each one of the major

types is much smaller than the school which the average pupil attends. One-half the "regular" high schools in the United States, for example, enrolled in 1929-30 fewer than 75 pupils each, whereas half

TABLE IV
DISTRIBUTION OF SECONDARY SCHOOLS OF VARIOUS TYPES ACCORDING TO
ENROLMENTS IN 1929-30

| TYPE OF SCHOOL | NUM- BER OF SCHOOLS † | PERCENTAGE OF SCHOOLS WITH ENROLMENTS OF— | | | | | |
|--|-----------------------------------|---|-------|---------|---------|---------|------------------|
| | | 10-49 | 50-99 | 100-199 | 200-499 | 500-999 | 1,000 or More |
| Junior high schools: | | | | | | | |
| *Grades 7-9..... | 1,288 | 7.0 | 7.5 | 7.2 | 23.5 | 31.7 | 23.1 |
| *Grades 7-8..... | 204 | 4.9 | 7.9 | 24.0 | 44.6 | 14.2 | 4.4 |
| *Grades 7-10..... | 196 | 48.5 | 26.5 | 11.2 | 5.1 | 5.1 | 3.6 |
| †Grades 6-8..... | 60 | 1.7 | 1.7 | 5.0 | 31.7 | 36.6 | 23.3 |
| Other junior schools..... | 44 | 9.1 | 2.3 | 6.8 | 31.8 | 40.9 | 9.1 |
| All junior schools..... | 1,792 | 11.1 | 9.3 | 9.5 | 24.4 | 27.2 | 18.5 |
| Junior-senior and undivided high schools: | | | | | | | |
| *3-3 plan junior-senior..... | 936 | 1.2 | 13.9 | 30.8 | 33.8 | 13.2 | 7.1 |
| *2-4 plan junior-senior..... | 637 | 3.1 | 18.2 | 32.2 | 36.0 | 8.3 | 2.2 |
| *Undivided 6-year schools..... | 1,446 | 3.0 | 20.5 | 41.4 | 24.1 | 6.9 | 4.1 |
| *Undivided 5-year schools..... | 65 | 10.8 | 32.3 | 27.7 | 9.2 | 12.3 | 7.7 |
| Other junior-senior and undivided schools..... | 95 | 2.1 | 20.0 | 17.9 | 36.8 | 17.9 | 5.3 |
| All 5-year and 6-year schools | 3,179 | 2.6 | 18.3 | 35.4 | 29.4 | 9.5 | 4.8 |
| Senior high schools: | | | | | | | |
| *Grades 10-12..... | 454 | 0.2 | 2.2 | 5.7 | 28.2 | 31.5 | 32.2 |
| *Grades 9-12..... | 142 | 0.7 | 2.2 | 3.5 | 42.2 | 35.2 | 16.2 |
| †Grades 9-11..... | 42 | 0.0 | 0.0 | 7.1 | 28.6 | 23.8 | 40.5 |
| Other senior schools..... | 10 | 0.0 | 0.0 | 20.0 | 20.0 | 40.0 | 20.0 |
| All senior schools..... | 648 | 0.3 | 2.0 | 5.6 | 31.2 | 31.9 | 29.0 |
| All reorganized schools..... | 5,619 | 5.1 | 13.6 | 23.7 | 28.0 | 17.7 | 11.9 |
| All regular schools..... | 15,903 | 33.7 | 32.3 | 19.7 | 9.2 | 2.5 | 2.6 |
| All secondary schools..... | 21,522 | 26.2 | 27.4 | 20.8 | 14.1 | 6.5 | 5.0 |

* Schools in twelve-grade systems.

† Schools in eleven-grade systems.

‡ A slight discrepancy appears between the numbers of unclassified reorganized schools shown in Table III and the numbers of eleven-grade and unclassified schools shown in Table IV. The difference is due to the fact that certain schools classified in Table IV as separate junior and senior high schools are classified in Table III as combined schools.

the pupils enrolled in such schools attended schools of 424 pupils or more. Similarly, half the reorganized schools were schools of fewer than 281 pupils, but the schools attended by a majority of the reorganized-school pupils were at least three times as large as this. A

corresponding difference occurs in the case of each separate type of reorganized school.

Study of the distribution of schools according to the populations of the communities in which they are found shows, as might be expected, that size of school closely parallels size of community. As a result of the various influences which affect the size of individual school units, the present system of American secondary schools may therefore be somewhat paradoxically interpreted. The system is one in which the majority of schools are small schools situated in small communities. At the same time, the system is one in which the majority of pupils are educated in large schools located either in cities or in towns of substantial size. Reorganized schools as a group provide an exception to the paradox in that most reorganized schools are at present relatively large schools. Even among the reorganized schools, however, there is a vast difference between the size of the average school and the size of school in which the average pupil is educated.

PRESENT TRENDS IN REORGANIZATION

Comparison of the status of reorganization, as revealed by the biennial survey of education conducted by the United States Office of Education in 1925-26 and its status as shown by the same survey of 1929-30, points to certain definite trends in the movement for reorganization. Changes in the numbers of various types of schools, in their relative total enrolments, and in the average size of the individual school units are of particular significance. These changes are summarized in Table V.

It is apparent that there has been a steady increase in the total numbers of schools of nearly every major type during the four-year period represented. The sole decrease of importance occurs in the case of the five-year undivided schools in twelve-grade systems, which fell from a total of one hundred schools in 1925-26 to a total of sixty-five schools in 1929-30. The schools which have shown the greatest relative growth in numbers are the six-year undivided schools, the four-year junior high schools in twelve-grade systems, and the three-year junior high schools in eleven-grade systems. The growth in the number of undivided schools is especially noteworthy. In 1925-26 this type of organization ranked fourth in terms of the number of individual schools included. In 1929-30 the six-year undi-

vided schools were more numerous than any other single type of school.

As might be expected, the types of schools which show the greatest increases in total enrolment are the types which have increased most

TABLE V
PERCENTAGES OF INCREASE OR DECREASE IN NUMBER OF SECONDARY SCHOOLS
OF VARIOUS TYPES, NUMBER OF PUPILS IN ATTENDANCE, AND AVERAGE
ENROLMENT PER SCHOOL FROM 1925-26 TO 1929-30

| TYPE OF SCHOOL | PERCENTAGE OF INCREASE OR DECREASE | | |
|---|------------------------------------|---------------------|-----------------------------------|
| | Number of Schools | Number of Pupils | Average Enrol- ment per School |
| Junior high schools: | | | |
| *Grades 7-9..... | 61 | 62 | 0.3 |
| *Grades 7-8..... | 38 | 73 | 25.6 |
| *Grades 7-10..... | 180 | 171 | - 8.9 |
| †Grades 6-8..... | 173 | 172 | - 0.3 |
| Other junior schools..... | 0 | 9 | 9.8 |
| All junior schools..... | 66 | 65 | - 0.4 |
| Junior-senior and undivided high schools: | | | |
| *3-3 plan junior-senior..... | 31 | 31 | - 0.6 |
| *2-4 plan junior-senior..... | 6 | 11 | 3.9 |
| *Undivided 6-year schools..... | 212 | 178 | -11.1 |
| *Undivided 5-year schools..... | - 35 | - 50 | -23.2 |
| Other junior-senior and undivided schools..... | 30 | 142 | 86.3 |
| All 5-year and 6-year schools..... | 63 | 56 | - 4.5 |
| Senior high schools: | | | |
| *Grades 10-12..... | 74 | 102 | 15.3 |
| *Grades 9-12..... | 12 | 42 | 26.7 |
| †Grades 9-11..... | 83 | 82 | - 0.3 |
| Other senior schools..... | 0 | 0 | 0.0 |
| All senior schools..... | 58 | 88 | 19.3 |
| All reorganized schools..... | 63 | 66 | 1.6 |
| All regular schools..... | 15 | 20 | 3.9 |
| All secondary schools..... | 25 | 39 | 11.4 |

* Schools in twelve-grade systems.

† Schools in eleven-grade systems.

in numbers. Increase in enrolment, however, is not always in due relation to increase in numbers. Within the twelve-grade systems the two-year junior high schools and the three- and four-year senior high schools have added proportionately more pupils than schools. The four-year junior high schools and the undivided six-year schools have tended in the opposite direction, increasing in numbers of schools more rapidly than in total enrolments. Though among both

reorganized and conventional schools enrolments have in general grown faster than the numbers of school units, certain types of schools present significant exceptions to the general trend.

These exceptions stand out clearly in the percentages of increase or decrease in average enrolment per school for the various types. Increases in average enrolments are unquestionably to be explained in part by general growth in the high-school population. Certain types of schools, however, have either decreased in size or have shown an increase which can hardly be accounted for on the basis merely of general growth. It has been pointed out that changes in size have practically always been accompanied by increases in the numbers of individual schools. Hence, it seems fair to assume that for the types of schools in question the changes in size have resulted in considerable measure from the addition of new schools varying in enrolment from the schools of the original groups.

Interpreted from this standpoint, the data presented in Table V suggest a number of important tendencies. It seems evident that the two-year junior high schools and the three- and four-year senior high schools within twelve-grade systems have been tending to become, to an increasing extent, large city schools. Undivided five- and six-year schools and 3-3 junior-senior high schools have apparently grown in number through the addition of small schools in the less populous communities. Three-year junior high schools in twelve-grade systems and both junior and senior high schools in eleven-grade systems would seem likewise to have spread largely in the smaller communities, though to a less extent than the combined schools. Among the 2-4 junior-senior high schools and the conventional four-year high schools, there is no clear evidence of any important change in relative distribution.

The changes in average enrolments thus indicate an extension of the reorganization movement to schools of smaller size. It should be recalled that, in spite of this trend, reorganized schools are still predominantly large schools located in towns and cities of at least moderate size. If it is assumed that there will be no untoward interference with the tendencies of recent years, there is reason to expect that the next decade may witness the widespread development of reorganized schools in much smaller communities.

RESEARCH IN SECONDARY SCHOOLS

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THE PROBLEM

Much has been written concerning the need for, and the function of, research in education. "Research in education is essential if we are to solve the problems that are not only increasing in number but also increasing in complexity."¹ We are told that during the current economic recession the manufacturing concerns which have put the most emphasis on research have been conspicuous for their success. Just as industrial concerns are turning to research for developing better products, for inaugurating more economical methods of production, and for eliminating waste, so must education rely on research in leading the way to sound educational programs in these times of unrest as well as during normal periods. Research should be fostered in order to point out, on bases as objective as possible, the best means of economizing and the best ways of improving school efficiency.

Among the projects carried on by the National Survey of Secondary Education was a project bearing the title "Research in Secondary Schools." From the report of that project the data for the present article have been drawn. A cursory consideration of the problem will convince one that an exposition of research in secondary schools is dependent on research carried on by the bureaus of research in city school systems. This fact makes necessary a study of such bureaus, but, in general, this report is concerned with these bureaus only in so far as their functions and activities relate to secondary education. However, this inquiry extended beyond the bureaus of research and investigated also research carried on within schools and school systems but outside the bureaus of research. Specifically, the purpose of the present article is to report on (1) the personnel of bureaus of

¹ A. N. Jorgensen, "The Necessity for Research in Education," *American School Board Journal*, LXXIII (August, 1926), 41.

educational research, (2) the types of undertakings of these bureaus both in city school systems and in individual secondary schools, (3) the research undertakings of secondary-school staff members (including teachers) not officially connected with bureaus of research, and (4) the nature of the research in secondary education carried on within schools and school systems.

METHODS AND SOURCES OF THIS INVESTIGATION

A few brief statements are needed to indicate the methods of inquiry and the chief sources of evidence drawn on in the study.

1. Seventy returns from comprehensive inquiry forms mailed to the directors of bureaus of research in city school systems have supplied the data presented concerning the city bureaus of educational research.

2. Early in the course of the National Survey of Secondary Education general inquiry forms were sent to the chief school officers of the different states, to large numbers of superintendents of city systems, and to even larger numbers of principals of secondary schools. These forms included a request for the names and the locations of secondary schools in which suggestive or noteworthy developments in educational research were being made. The sixty-eight usable returns from almost two hundred inquiry forms directed to the principals of the selected secondary schools thus reported have been utilized to ascertain the extent and the nature of the research carried on.

3. In order that the nature of the research conducted in the selected secondary schools might be compared with that conducted by secondary schools in general, an inquiry form was sent to nearly four hundred secondary-school principals chosen at random from the lists of schools in the files of the United States Office of Education. Data are presented in this report from 102 of these secondary schools. Without doubt, the action of filling in and returning an inquiry form is an element of selection. Consequently, if the returns from such an inquiry to secondary-school principals fail to reveal a large number of research activities in secondary schools, the actual number is probably even smaller than is reported by the replies on the inquiry forms.

Although the number of reports is not large, sufficient data are available to give a fair picture of the extent and nature of the research work at the secondary level carried on by bureaus of research and by persons within secondary schools not connected with these bureaus.

THE BUREAUS OF EDUCATIONAL RESEARCH

Definition of the research bureau.—The term "bureau of educational research," as used in this report, includes all definitely-created subdivisions of whatever title in school systems, teacher-training institutions, universities, or state departments of education which perform activities and functions related to research and statistics, mental and educational measurements, child welfare and classification, educational or vocational guidance, experimental research work, or any other functions either of conducting reference and investigation or of directing the investigative activities of others.¹

Present status of the bureaus.—The number of research bureaus has grown consistently since the establishment of the first bureau about 1912. Because new bureaus have been organized and some have been discontinued, it is extremely difficult to determine the number of bureaus of educational research in operation at the present time. However, the data at hand seem to indicate that there are about 150 bureaus in city school systems and about 100 others in state departments of education, state education associations, state universities and colleges, and secondary schools. These bureaus are usually headed by full-time directors, who are responsible to the superintendent of schools for the performance of their duties. The directors have had considerable educational experience, but a large proportion of them have had little experience in teaching in either elementary schools or secondary schools. In general, if measured by the highest degrees held and the type of specialization during periods of graduate study, they are well trained for the positions which they hold. The median bureau of research among the 70 studied in city

¹ For a more detailed discussion of this definition see Harold Benjamin Chapman, *Organized Research in Education*, p. 19. Bureau of Educational Research Monographs, No. 7. Columbus, Ohio: Ohio State University Press, 1927. Also Elise H. Martens, *Organization of Research Bureaus in City School Systems*, p. 2. United States Bureau of Education City School Leaflet No. 14, January, 1924.

school systems has 1.5 professional assistants, who are usually recruited from elementary-school teachers or principals; 1.4 full-time clerical assistants; a salary budget of about \$6,700; and an operating budget of about \$2,000. In view of the fact that administrative functions are often delegated to bureaus of research, it is probable that many of the bureaus with staffs and operating budgets of the size mentioned are unable to carry on effectively a large number of projects of an investigative or research nature.

Most of the previous investigations of research bureaus have not reported any bureaus of research in secondary schools. Even the *Educational Directory* issued in 1932 by the United States Office of Education lists only two such bureaus. Although the reports to the National Survey of Secondary Education indicated the names of four more, all but two of those reported are found in the township high schools of Illinois and the union high schools of California, which do not have access to the services of research bureaus within city school systems. The conclusion may therefore be made that it is decidedly exceptional for individual secondary schools to maintain bureaus of educational research. For this reason we must at present look to the bureaus of research in city school systems to carry on most of the organized research in secondary schools which is done outside the departments of education in higher institutions.

Functions of the bureaus.—The inquiry forms mailed to the directors of research in city school systems included a list of twenty-three activities or functions largely of an administrative or supervisory nature. These activities are listed in Table I together with the percentage of bureaus performing each and the ranks of the functions on the basis of these percentages. Although most of the functions reported are closely related to research or are dependent on research procedures, they are, in general, of an administrative rather than an investigative nature. Large percentages of the directors reported that the research bureau administers achievement and mental tests, answers questionnaires for the school system, prepares and publishes reports, and classifies school children.

There is no intention either in the report of the National Survey of Secondary Education or in this article to discredit these functions as unimportant. However, the mere fact that a given function is

important by no means argues that it is research or that logically it should be delegated to the bureau of research, unless the particular bureau is a composite organization exercising more than one function. The activities of the bureau of research with reference to these functions should be to investigate the problems, to interpret the data, and even perhaps to develop tentative plans and courses of action.

TABLE I

TWENTY-THREE ADMINISTRATIVE AND SUPERVISORY FUNCTIONS RANKED
ACCORDING TO THE PERCENTAGE OF SEVENTY RESEARCH BUREAUS
PERFORMING EACH FUNCTION

| Function | Percentage of Bureaus | Rank |
|--|--------------------------|-------|
| Administer achievement and mental tests..... | 91 | 1 |
| Answer questionnaires for the school system..... | 87 | 2 |
| Prepare and publish reports..... | 86 | 3 |
| Classify school children..... | 74 | 4 |
| Disseminate educational information..... | 64 | 5 |
| Give educational guidance..... | 59 | 6 |
| Train teachers for special testing..... | 56 | 7 |
| Organize and conduct special classes..... | 46 | 8 |
| Conduct psychological clinic..... | 41 | 9 |
| Give vocational guidance..... | 31 | 10 |
| Supervise instruction for handicapped children..... | 29 | 11.5 |
| Conduct professional library service for teachers..... | 29 | 11.5 |
| Supervise teaching..... | 24 | 13.5 |
| Conduct publicity campaigns..... | 24 | 13.5 |
| Administer school census..... | 23 | 15 |
| Provide lecture service..... | 21 | 16 |
| Check building plans..... | 16 | 17 |
| Place students in industry..... | 14 | 18 |
| Compile budget..... | 13 | 19 |
| Select and assign teachers..... | 11 | 20 |
| Provide accounting service for the school system..... | 10 | 21 |
| Provide adult education..... | 4 | 22 |
| Conduct Americanization service..... | 1 | 23 |
| Other functions..... | 9 | |

Adopting the plans and putting them into operation are administrative concerns and should not be regarded as the province of the bureau of research, unless it is clearly understood that the bureau combines both research and administration.

Investigations which bureaus are authorized to conduct.—The directors of sixty bureaus of research responded to the request of the National Survey of Secondary Education that they indicate both the fields of investigation in which the bureaus are authorized to conduct investigations should the occasion arise and the fields in which the

bureaus have made investigations. The replies of the directors to these questions are summarized in Table II. The bureaus are most frequently authorized to conduct investigations in the promotion, failure, classification, and retardation and elimination of pupils and to administer standardized examinations and achievement tests. The bureaus are least frequently authorized to conduct studies concerning employment service, the clerical staff, libraries, the supervision of instruction, problems of pupil personnel, teaching methods, problems of vocational guidance, and textbook analysis.

Investigations conducted.—The reports of the directors on the fields in which their bureaus have actually made investigations, as given in Table II, show that, although the proportions of bureaus authorized to conduct investigations concerning pupil failures and promotions are greatest, the fields in which the largest proportions of bureaus have actually made studies are the administration of standardized examinations and achievement tests. Further scrutiny of the data seems to show that bureaus of research in city systems typically administer tests and examinations, classify pupils, and study pupil failures and promotions but much less frequently undertake research in the supervision of instruction, teaching methods, library service, or employment service. Without doubt, this situation may be partly accounted for by the fact that many bureaus of research had their origin during the development of the testing movement and were early delegated the responsibility of administering achievement and mental tests.

Studies in progress during 1929-30.—The distribution of studies in progress during 1929-30 in fifty-three bureaus of research is shown in the third column of figures in Table II. The total of these studies is 1,116. If it is assumed that the reports were correctly made, the average number of studies for a bureau is 21.1. The application or development of survey tests and standardized examinations, achievement tests, and curriculum studies together constitute nearly a third of the total. A full half of the studies, as is shown in the last column of Table II, related primarily to the field of secondary education.

Availability of studies made by the bureaus.—Data not reported here in tabular form indicate that slightly more than half the total number of reports of studies in progress in city bureaus of research

TABLE II

NUMBER OF BUREAUS OF RESEARCH WHICH ARE AUTHORIZED TO CONDUCT AND WHICH HAVE CONDUCTED RESEARCHES IN VARIOUS FIELDS OF INVESTIGATION, NUMBER OF STUDIES IN PROGRESS, AND NUMBER OF STUDIES RELATING PRIMARILY TO SECONDARY EDUCATION

| FIELD OF INVESTIGATION | NUMBER OF BUREAUS (60)* | | NUMBER OF STUDIES (53)* | |
|--|---|-----------------------------------|-------------------------------------|---|
| | Authorized To Conduct Researches | Having Conducted Researches | In Progress during 1929-30 | Relating Primarily to Secondary Education |
| Administration: | | | | |
| Building, equipment, and supplies | 24 | 16 | 23 | 10 |
| Clerical staff | 15 | 6 | 4 | 0 |
| Educational finance | 23 | 17 | 11 | 5 |
| Marks and marking systems | 40 | 19 | 21 | 12 |
| Organization of school system | 25 | 9 | 8 | 4 |
| Promotions | 52 | 32 | 49 | 24 |
| Records and report forms | 43 | 29 | 29 | 14 |
| School-building program | 22 | 15 | 19 | 7 |
| Teachers and instruction: | | | | |
| Class size | 45 | 27 | 25 | 16 |
| Curriculum studies | 35 | 21 | 98 | 47 |
| Educational guidance | 39 | 18 | 40 | 16 |
| Extra-curriculum | 25 | 8 | 7 | 5 |
| Professional status of teachers | 33 | 18 | 16 | 3 |
| Supervision of instruction | 20 | 4 | 2 | 0 |
| Teaching methods | 21 | 4 | 3 | 1 |
| Teaching load | 40 | 22 | 19 | 14 |
| Vocational guidance and placement | 24 | 9 | 8 | 6 |
| Pupils: | | | | |
| Attendance of pupils | 33 | 16 | 29 | 26 |
| Classification of pupils | 50 | 36 | 50 | 25 |
| Employment service | 16 | 5 | 4 | 3 |
| Follow-up studies | 28 | 12 | 10 | 9 |
| Individual differences | 37 | 13 | 5 | 3 |
| Pupil failures | 53 | 32 | 25 | 10 |
| Retardation and elimination | 49 | 36 | 27 | 11 |
| Pupil personnel problems | 24 | 8 | 6 | 6 |
| Studies of handicapped children | 36 | 16 | 10 | 1 |
| Surveys and tests: | | | | |
| Achievement tests | 52 | 45 | 138 | 58 |
| Mental tests | 49 | 40 | 69 | 38 |
| Objective classroom examinations | 39 | 26 | 22 | 17 |
| Surveys of school system | 32 | 11 | 8 | 3 |
| Survey tests and standardized examinations | 50 | 45 | 123 | 68 |
| Test construction | 42 | 28 | 52 | 33 |
| Others: | | | | |
| Kindergarten and primary education | 35 | 15 | 11 | |
| Elementary education | 37 | 18 | 39 | |
| Secondary education | 37 | 15 | 40 | 40 |
| Libraries and library service | 18 | 4 | 3 | 1 |
| Preparation of bibliography | 27 | 8 | 4 | 1 |
| Studies of research functions | 30 | 7 | 5 | 1 |
| Textbook analysis | 24 | 14 | 21 | 13 |
| Other types of studies | 17 | 17 | 33 | 12 |
| Total | | | 1,116 | 563 |

* The numbers in parentheses are the number of reports represented.

during 1929-30 were mimeographed. The proportion made available through printed bulletins, monographs, and educational periodicals is much smaller. The data show that only about 7 per cent of the reports have been printed, that about 2 per cent have been published in educational periodicals, and that nine reports were submitted to colleges and universities as Masters' or Doctors' theses. The proportion of reports not duplicated through mimeographing, printing, or publication must therefore exceed two-fifths of the total number of studies made. The findings of studies not thus duplicated are not made available unless in a limited way through the use of typewritten copies. This procedure may be appropriate, especially if a study is made only for the guidance of administrative officers. On the other hand, the publication of reports may be considered one test of the merits of educational research.

RESEARCH OUTSIDE THE BUREAUS

Research by staff members in city systems.—The reports of sixty-seven directors of research indicate that in almost a fourth of the systems school boards make provisions permitting members of the secondary-school staff not officially connected with the bureaus of research to devote part time or full time to research. Although certain leaders in education urge that teachers should also be research workers, any research which they attempt must in most systems be performed in addition to their already numerous duties. To be sure, it is not impossible for the ambitious teacher to carry on some research activity in addition to the normal load of instruction. Of the sixty-nine directors who supplied data concerning the research activities of secondary-school staff members not officially connected with research bureaus, three-fifths reported that they knew of no studies which had been completed. Less than 30 per cent of the studies made by staff members in systems reported by the remaining two-fifths of the directors have been printed or mimeographed. The reports of more than a third of the investigations were submitted to institutions of higher education as theses. Only about a third of the staff members making research studies were advised by the bureau of research, and only about 5 per cent of them were supplied with financial or clerical aid from the bureau.

Research in individual secondary schools.—Little research is being carried on by staff members of secondary schools. This statement applies even to those schools which were reported to the survey staff as schools in which noteworthy developments in educational research have been made. Almost half of the principals of this group of schools from which reports were received indicated that no important research was being carried on. Among the secondary schools chosen at random the amount of research carried on is even less, about 70 per cent of the principals of this group of schools replying that no research was being conducted by members of the staff. The filling-in and the returning of a searching inquiry form must have operated to select schools with more research activity than ordinarily found, since principals of schools promoting research would be more disposed to return the form than principals of schools in which no research was in progress. The general situation can certainly be no better and probably is considerably less satisfactory than is indicated in the reports received.

CLASSIFICATION AND ANALYSIS OF RESEARCHES
MADE BY BUREAUS

The inquiries sent to the directors of research in city systems requested copies of reports of studies recently completed by the bureaus. A large number of reports were submitted, but for the purpose of this investigation only the 111 studies relating primarily to secondary education were utilized. These reports were classified and analyzed, and a similar classification and analysis was made of thirteen Masters' theses from seven different institutions of higher learning and seventeen Doctors' theses from seven other institutions, all the theses relating to problems of secondary education. Thus, comparison of the product of bureaus of research with graduate theses of departments of education in universities is possible.

The results of a classification of the reports and of the theses are shown in Table III. The proportions of the studies made by the bureaus which deal with the administration or construction of tests, with marks and marking, and with acceleration, retardation, or failure of pupils are considerably larger than the corresponding proportions of the studies made in partial fulfilment of the requirements for

advanced degrees. The latter more often deal with the training or the status of teachers, subjects of the curriculum, and teaching methods.

No complete analysis of the quality and the value of the research done in bureaus of research was undertaken for the National Survey of Secondary Education. Although several publications have set up guiding principles on how to conduct and to judge research work, many of the items given in such lists of principles depend largely on

TABLE III
DISTRIBUTION OF REPORTS FROM BUREAUS OF RESEARCH AND OF
GRADUATE THESES ACCORDING TO FIELDS STUDIED

| FIELD OF STUDY | REPORTS FROM BUREAUS OF RESEARCH | | GRADUATE THESES | |
|--|-------------------------------------|----------|-----------------|----------|
| | Number | Per Cent | Number | Per Cent |
| Administration or construction of tests..... | 56 | 50.5 | 4 | 13.3 |
| Marks and marking..... | 12 | 10.8 | 0 | 0.0 |
| Acceleration, retardation, or pupil failures.... | 8 | 7.2 | 1 | 3.3 |
| Training or status of teachers..... | 7 | 6.3 | 4 | 13.3 |
| Classification of pupils..... | 6 | 5.4 | 1 | 3.3 |
| Follow-up studies..... | 4 | 3.6 | 0 | 0.0 |
| Subjects of the curriculum..... | 3 | 2.7 | 8 | 26.7 |
| Teaching methods..... | 0 | 0.0 | 2 | 6.7 |
| Other fields..... | 15 | 13.5 | 10 | 33.3 |
| Total..... | 111 | 100.0 | 30 | 99.9 |

the subjective judgments of the person or persons analyzing the reports. Because the time for conducting this study was too short to permit analysis of the studies by a group of judges and because the writer thought it inadvisable to render his own judgment on the quality of research on subjective bases, the examination of the research studies was made in relation to certain questions answerable on bases which are comparatively objective. These bases are implied in the following questions.

1. What methods have been used for duplicating the report?
2. Has the report been bound?
3. How many pages are contained in the report?
4. Is the report divided into chapters, parts, or other subdivisions?

5. Does the author call attention to related studies, and does the report have a bibliography?
6. How much space is devoted to tabular and graphical materials?
7. Are the data interpreted?
8. Is the problem defined?
9. Is a statement given of the method or methods of investigation?
10. What methods were used in obtaining the data?
11. Is the source of the data made clear?
12. Is the study dominantly based on opinion or fact?
13. Are the findings applied to concrete problems?
14. Are further studies suggested?
15. What statistical methods are utilized in presenting the data?
16. Does the study have a summary or conclusion?
17. What do the conclusions show?

Outcomes of the analysis.—An analysis of research studies made on the bases implied in the questions listed will not inevitably reveal the value of the research. Studies may rank well with respect to nearly all these criteria and still lack the logical development, interpretation, and significance of data that make research valuable. The mechanics of the report may be excellent, yet the interpretation may be faulty, the ideas ineffectively expressed, or the results without significance. Some of the bases, such as the manner of reproduction, the binding, the number of pages, and the division of the report into chapters or other subdivisions, are of less value than the remaining bases; but even these may, to some extent, serve as tests of the value of research. Since the subjective elements are intangible, this report concerns itself with the more objective bases, the expectation being that the application of a number of criteria will give some indication of important differences in the character or quality of researches done under the two types of auspices represented.

Space does not permit here further discussion of the bases used in making the analysis. A summary of the results of the comparisons must suffice. On the whole, the studies submitted by bureaus of research in city systems appear to be largely fact-finding reports which undertake to analyze and interpret the data presented. Research

studies from city bureaus are less readily available, less frequently duplicated, and are shorter than either Masters' or Doctors' theses. The median length of the reports of city bureaus is 8.5 pages of double-spaced mimeographed material. Reports of this length could hardly be bound or organized into chapters. Although the method of duplicating reports, the number of pages, the division of the reports into chapters, and the method of binding are not acceptable criteria of the value of educational research, study of the data assembled leave the impression that research reports from city bureaus are less substantial documents than are either Masters' or Doctors' theses and that the former concern much more limited and specific problems than do the latter.

Only a few of the reports of studies made by bureaus of research give references to related investigations bearing on the problem. Tables, charts, and figures occupy almost 70 per cent of the total amount of space in the reports examined. In contrast, the tables and the graphical material presented in Masters' and Doctors' theses constitute less than a third of the total. As a result, relatively little interpretation of data is attempted in the reports from bureaus. Only about a third of the reports from city bureaus contain any statement of the purpose of the studies and the nature of the problems; only about a fourth have a statement concerning the method or methods employed in making the studies; and about a third of the studies from bureaus fail to make clear to the reader the source of the data on which the reports are based. Few of the studies from city bureaus either apply the findings of the investigations to concrete problems or suggest methods through which the investigations may be extended or related to contemplated research problems. The statistical measures employed in the research conducted by city bureaus are of a more elementary nature than those used in Masters' or Doctors' theses. Finally, almost 60 per cent of the reports from city bureaus have no summaries of data nor any conclusions regarding the value, significance, or application of the findings.

Doubtless, some theses are needlessly elaborate in certain of these respects, but the contrast between the researches under the two types of auspices is too striking to be anything but unfavorable to the reports from the bureaus of research. If this inference is combined

with the inferences from evidence presented in earlier portions of this report, the assertion is warranted that the bureaus too often seem to be restricted to two main functions, namely, rendering administrative service in the system and compiling facts and statistics. Unquestionably, these are important services, but it is regrettable that the bureaus do not more frequently execute comprehensive programs which would qualify on more of the criteria of research in the stricter sense.

CONCLUSION

The first impression from the evidence of this report, with respect both to the activities of bureaus of research and to the research activities in school systems but outside the bureaus, is one of discouragement. The upshot of the facts presented is that the total extent and the quality of the research carried on within schools and school systems is not highly commendable. Second thought on the situation disclosed is, however, more encouraging. The research movement in education is, after all, relatively new, and each bureau has had to work out its own problem and doubtless must at first justify its existence by rendering obvious service to administration. Performance of these administrative functions, which often must resort to the procedures of research, should gradually lead to committal to substantial programs of research in the bureaus, and these, in turn, should stimulate larger proportions of individual members of school staffs not officially connected with the bureaus to carry on significant studies. Much assurance may be taken from the fact that at least a small number of bureaus in city systems of the country are prosecuting estimable investigative programs. The existence of a large number of bureaus of research and of at least a small number of bureaus with strong investigative programs is a prophecy of a generous spread of research activity outside higher institutions which will help to elevate education to unquestioned professional status.

COLLEGE CHEMISTRY IN HIGH SCHOOL

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BACKGROUND OF THE EXPERIMENT

During the past few years many articles have appeared in educational and scientific journals dealing with the essentials, or minimum content, of a course in high-school chemistry. This problem has been studied in considerable detail at the Joliet Township High School and Junior College, and data have been collected over a period of five years. The study of the content of a minimum course and the proper accrediting of the course constitute a distinct secondary-school problem, but one which confronts colleges and universities as well as high schools. The ultimate solution of this problem can, therefore, best be attained at an institution like that at Joliet where the course in inorganic chemistry is taught to high-school Seniors and college Freshmen under the same supervision.

In March, 1928, the North Central Association of Colleges and Secondary Schools granted the Joliet Township High School and Junior College permission to experiment in the field of the secondary-school curriculum. The following is the statement of the application as submitted by Lewis W. Smith, at that time superintendent of the institution.

Application is hereby made to the North Central Association of Colleges and Secondary Schools on behalf of the Joliet Township High School and Junior College that the latter institution, with no loss of accredited standing, shall be given authority to conduct educational experiments in the field of the secondary-school curriculum and in the field of student achievements. It is understood that the technical standards having to do with units and hours of credits may be disregarded but that academic achievements represented by such units and hours of credit will, in all respects, be maintained.

It is further understood that all experimentation conducted in the Joliet Township High School and Junior College will be conducted under the supervision of a committee of educators to be appointed by the chairman of the Commission on Higher Education of the North Central Association of Colleges and Secondary Schools.

Chairman H. M. Gage, of the Commission on Institutions of Higher Education, appointed the following men as a supervising committee: Professor H. C. Morrison, of the University of Chicago, chairman; Dean C. E. Chadsey, College of Education, University of Illinois;¹ Dean J. E. Stout, School of Education, Northwestern University.

PURPOSES AND JUSTIFICATION OF THE EXPERIMENT

One of the immediate purposes of the experiment was to remove, if possible, duplication found in high-school and college courses in general inorganic chemistry. As already stated, considerable data have been gathered thus far in the course of the experiment, and the results seem to justify a rather complete report at this time.

In the beginning the experiment was organized to answer, if possible, the two following questions: (1) Should the content of a course in high-school chemistry be principally cultural, or should it be comprehensive and thorough? (2) Need there be any difference between the course in general chemistry taught to Seniors in high school and the course taught to Freshmen in college?

Many educators, particularly in the colleges and the universities, seem to believe that the pupils in a class in general chemistry in high school are capable only of being initiated into the fundamentals of the subject or possibly of being inspired to such an extent that they may desire to continue the subject in college. The attempt to accomplish these aims may be lauded, but the second question remains: Can we not, and should we not, go a step farther and give our high-school Seniors a comprehensive course in the subject—a course which is the equivalent of the general chemistry taught in college?

Two main objections have been raised to the advisability and possibility of such a procedure. First, we are told that high-school pupils are not mature enough to undertake such a course or that they are not serious minded enough to carry it to completion—in other words, that the pupil must not and cannot do college work until three months have elapsed after his graduation from high school and he finds himself on a college campus in the so-called "college atmos-

¹ After Dean Chadsey's death his place on the committee was taken by Dean Thomas E. Benner, also of the College of Education, University of Illinois.

phere." The writers feel that the data which they have obtained constitute a rather definitive answer to this objection. The second objection heard is as follows: "Granted that such a course might be given successfully, it would benefit only the small percentage of pupils who plan to attend college, and especially those who expect to take advanced courses in chemistry." In this connection, at least as far as it concerns the local problem, enlightening evidence is at hand.

It might be well to explain at this time that in the local high school chemistry is required only in the pre-medical, nursing, engineering, and industrial-arts curriculums and that the subject is elective in most of the other curriculums. Consequently, the group pursuing chemistry is selected, as all are studying the subject either because it is important in the careers for which they are planning or because it holds real interest for them.

In a study of the plans of these pupils it was found that more than 80 per cent contemplate attending college or university and that almost as large a percentage will probably continue the study of chemistry in college for at least one year. From 12 to 20 per cent of these classes are composed of boys completing the industrial-arts curriculum, preparing for skilled trades rather than for professional careers. Certainly all the fundamental chemistry they can acquire is none too much for this group. In fact, several of these boys have become so absorbed in the subject that they have gone on to college and specialized in the various fields of science.

Cornog and Stoddard have written:

It is not easy to form a suitable theory explaining why Freshmen at some institutions should display superior training in high-school chemistry as compared with groups at other institutions. It may be observed, however, that most of the colleges where high average scores were obtained are located in or near large cities located in highly industrialized parts of the country.¹

The writers feel that this condition is noticeably reflected in the chemistry classes in Joliet, an industrial city. The pupils have also been given a thorough foundation in science in the lower high-school years before undertaking the study of chemistry. The Seniors making up the chemistry classes are, then, a group of pupils who are will-

¹ Jacob Cornog and George D. Stoddard, "Predicting Performance in Chemistry. II," *Journal of Chemical Education*, III (December, 1926), 1412.

ing to put forth effort and who are, for the most part, capable of mastering the content of general chemistry so thoroughly that they may in their Freshman college year take up the study of qualitative analysis or whatever branch of chemistry is considered best as a second unit in the program. Of course, it is not expected that the achievement of every member of the group will entitle him to such advancement. Among the disrupting factors are a lack of aptitude for chemistry and sheer laziness. The writers have been comforted by the knowledge that the college teacher has the same problems to face, and they feel that the mortality list in high school should not mount nearly so high as that in college because in high school smaller groups are taught, the teacher has closer personal contact with the pupils, and, given the proper help by the parents, the teacher has a better grip on conditions outside the classroom and the laboratory.

Under these conditions the high school is not doing its full duty to these pupils when it fails to give them an opportunity to achieve the equivalent of the college course in general chemistry, and, if they accomplish the work, they are certainly entitled to promotion in the subject. Our contention is that it should make no material difference whether a pupil takes general chemistry in the twelfth or the thirteenth year. His achievement rather than his school age should be the basis of evaluation. Furthermore, the study has been carried far enough to warrant the rather definite statement that a large percentage of high-school Seniors will, if given the opportunity, learn as much general chemistry as college Freshmen. It follows that, if they achieve equal results, it is a waste of time for them to repeat any part of the course in college and that they should receive the same credit as they would have received had the work been done in college, provided, of course, that they are able to present the required number of entrance credits without using those earned in chemistry.

This plan is not entirely new, as it has been followed in general in the local high school and junior college for almost a decade. The superior high-school pupils have been promoted directly into a course of qualitative analysis of a year in length, followed by one semester each of quantitative analysis and organic chemistry. A rather accurate and complete record of these pupils extending over a period of about ten years presents definite testimony of the practicality and

efficiency of the plan, as these students have made highly satisfactory records in the various universities and medical schools of the Middle West. Formerly it was necessary to rely entirely on the teachers' marks and judgments as the basis for promotion, but the selection has now been made easier and more accurate by the use of recognized standardized tests in the subject.

RESULTS OF THE EXPERIMENT

The University of Iowa Chemistry Training Test, Revised, Form A, has been used in testing the students. In January, 1929, Cornog and Stoddard reported that this test had been given to 474 Freshmen completing general chemistry at the University of Iowa, at Purdue University, at the University of Illinois, and at the Oklahoma Agricultural and Mechanical College.¹ A comparison of the scores made by these Freshmen and by the experimental classes in Joliet are given in Table I.

Professor Stoddard, of the University of Iowa, one of the co-authors of the Iowa test, wrote to the Joliet school officers as follows:

Recently we have had occasion to differentiate between students who took their examinations after a year of Freshman chemistry. The high-school median was 67; the college median, 82. The high-school mean was 91; the college mean, 83. I would think that the average pupil may be considered to have achieved the equivalent of college chemistry (to the extent that it is measured by this test), when he attains a score of 83 or above.

As a basis for accrediting and for promotion, there are available, in addition to the teachers' marks and opinions (about six or seven essay-type examinations being given during each semester), these two established norms, the higher of which must be attained before a pupil is considered ready for qualitative analysis or an equivalent course. As a matter of fact, most of the pupils who have been recommended for college credit have scored 100 or more on this test and have done a superior grade of work during the year. Attainment of the lower norm entitled the pupil only to high-school credit. If such a pupil desires to continue the subject, he must repeat the course until he attains the higher norm, whether he requires one or two

¹ Jacob Cornog and George D. Stoddard, "The Chemistry Training of High-School and College Students," *Journal of Chemical Education*, VI (January, 1929), 85-92.

semesters more to do so. Experience has demonstrated, however, that such pupils rarely do a great deal better no matter how much longer they continue the study of general chemistry and that they are likely to fail in the advanced courses even though they may finally attain the higher norm in the first course.

TABLE I

COMPARISON OF SCORES MADE ON IOWA TEST IN CHEMISTRY BY 474 COLLEGE FRESHMEN TESTED BY CORNOG AND STODDARD AND OF SCORES MADE BY JOLIET HIGH-SCHOOL SENIORS

| Group | Number of Students Tested | Range of Scores* | Median Score | Percentage of Students Making Scores of 90 or Above |
|--|---------------------------|------------------|--------------|---|
| College Freshmen in Cornog and Stoddard's study | 474 | | 82 | 38.6 |
| Joliet high-school Seniors, June, 1928..... | 76 | 35-155 | 89 | 48.7 |
| Joliet high-school Seniors, June, 1929..... | 105 | 40-100 | 95 | 58.1 |
| Joliet high-school Seniors, June, 1930..... | 94 | 44-171 | 109 | 71.3 |
| Joliet high-school Seniors, June, 1931..... | 106 | 35-163 | 91 | 50.9 |
| Joliet high-school Seniors, June, 1932..... | 117 | 33-174 | 93 | 54.7 |
| Joliet high-school Seniors in academic curricula only, June, 1931..... | 73 | 35-163 | 94 | 57.5 |
| Joliet high-school Seniors in academic curricula only, June, 1932..... | 65 | 33-174 | 94 | 60.0 |

* The maximum score is 188.

The distributions of the scores made on the Iowa test by the Joliet high-school Seniors during the five-year period are given in Table II and graphically in Figure 1. The scores made by the high-school Seniors in June, 1928, give evidence that, as measured by this test, a large percentage of the group did a very creditable grade of college work, a smaller group did an average high-school grade of work, and only a small number failed to attain the lower norm. Most of the group last named failed to pass the course. Twenty-seven pupils, or 35.5 per cent of the total number, were recommended for college credit in the subject. The results obtained in June, 1929, indicate that the possibility of obtaining college credit acted as an incentive for a higher grade of work. The failures were reduced to a minimum. Again a small group did only a high-school grade of work, while the percentage achieving the college standard was larger.

Many very high scores were made. Forty-three pupils, or almost 41 per cent of the group, were recommended for college credit. The scores made in 1930 again indicate that the group doing work of only high-school grade is small and that the percentage of pupils who did a superior grade of work in college chemistry is surprisingly large. It would seem that discussion of the scores made in 1931 and 1932 is hardly necessary except perhaps in the case of the 1932 scores, which

TABLE II
DISTRIBUTIONS OF SCORES MADE ON IOWA CHEMISTRY TEST BY
JOLIET HIGH-SCHOOL SENIORS IN 1928-32

| SCORE | NUMBER OF PUPILS | | | | |
|--------------|------------------|------------|------------|------------|------------|
| | June, 1928 | June, 1929 | June, 1930 | June, 1931 | June, 1932 |
| 30-39..... | 1 | 0 | 0 | 2 | 3 |
| 40-49..... | 6 | 1 | 3 | 5 | 8 |
| 50-59..... | 2 | 4 | 1 | 6 | 10 |
| 60-69..... | 13 | 14 | 11 | 9 | 13 |
| 70-79..... | 8 | 7 | 5 | 16 | 11 |
| 80-89..... | 9 | 18 | 7 | 14 | 8 |
| 90-99..... | 7 | 19 | 11 | 21 | 20 |
| 100-109..... | 7 | 12 | 10 | 9 | 10 |
| 110-119..... | 10 | 11 | 13 | 9 | 11 |
| 120-129..... | 4 | 10 | 11 | 7 | 5 |
| 130-139..... | 5 | 4 | 7 | 4 | 5 |
| 140-149..... | 2 | 2 | 6 | 1 | 4 |
| 150-159..... | 2 | 2 | 5 | 2 | 5 |
| 160-169..... | 0 | 1 | 3 | 1 | 2 |
| 170-179..... | 0 | 0 | 1 | 0 | 2 |
| Total..... | 76 | 105 | 94 | 106 | 117 |

show that the group achieving only a high-school standard of work is larger than the corresponding group in any previous year. This result is explained, partly at least, by the fact that 52 of the 117 pupils tested in 1932 were boys completing the industrial-arts curriculum.

Additional factual data pertinent to the problem were obtained in 1931 and 1932 through the courtesy and co-operation of Victor H. Noll, of the University of Minnesota. This investigator kindly gave us permission to use his standardized chemistry test (Noll Achievement Test in General Inorganic Chemistry) for the purpose of drawing comparisons. This test is more difficult and comprehensive than the Iowa test and permits a maximum score of 150. The norm estab-

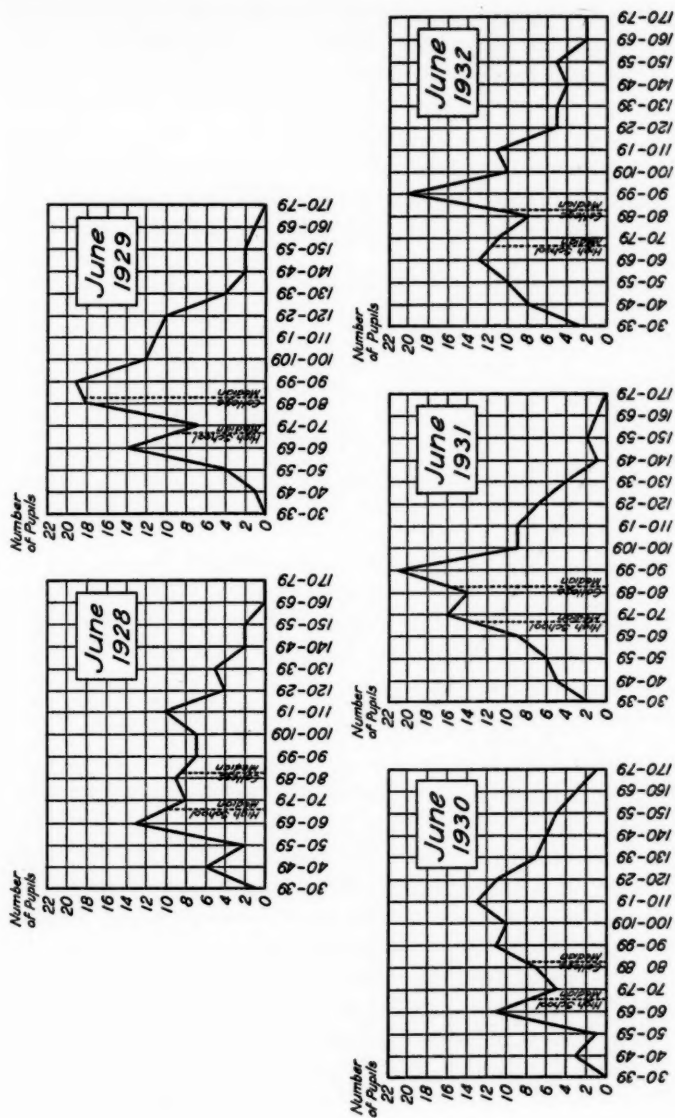


FIG. 1.—Distributions of scores on Iowa chemistry test made by Joliet high-school Seniors in 1928-32

lished by Noll as indicating satisfactory achievement in the Freshman course in college chemistry is 62.5. No norm has been established for a high-school grade of work. Consequently, only the scores made on this test by the Joliet high-school Seniors recommended for college credit during 1931 and 1932 will be shown, together with the graphic representation of the achievement of these two groups. The distributions of the scores made by the Joliet high-school Seniors are given in Table III and are shown graphically in Figure 2.

TABLE III
DISTRIBUTIONS OF SCORES MADE IN 1931 AND 1932 ON NOLL
CHEMISTRY TEST BY JOLIET HIGH-SCHOOL SENIORS
RECOMMENDED FOR COLLEGE CREDIT

| SCORE | NUMBER OF PUPILS | |
|--------------------|------------------|------------|
| | June, 1931 | June, 1932 |
| 30-39..... | 0 | 1 |
| 40-49..... | 3 | 4 |
| 50-59..... | 11 | 8 |
| 60-69..... | 10 | 7 |
| 70-79..... | 5 | 3 |
| 80-89..... | 5 | 7 |
| 90-99..... | 3 | 1 |
| 100-109..... | 0 | 1 |
| Total..... | 37 | 32 |
| Median score*..... | 64.5 | 64.3 |

* The norm established by Noll for satisfactory work in the Freshman course in college chemistry is 62.5.

A brief statement seems to be in order at this point by way of comparison between the pupils in the high-school classes in chemistry and those taking the subject for the first time in the Freshman year in the local junior college. It was pointed out earlier in this article that the high-school classes constitute a rather select group as far as their interest in science and the probable need for it in their intended professions are concerned. A study of the students in the junior-college classes in the corresponding course shows a decided difference. Over a period of four years only about 9 per cent of the latter have taken further work in the department. Most of these students were taking chemistry as their required science, and conse-

quently they could not be expected to show profound interest in the subject nor aptitude for it. In fact, it has been a most difficult task to bring the junior-college Freshmen up to the high-school level of achievement.

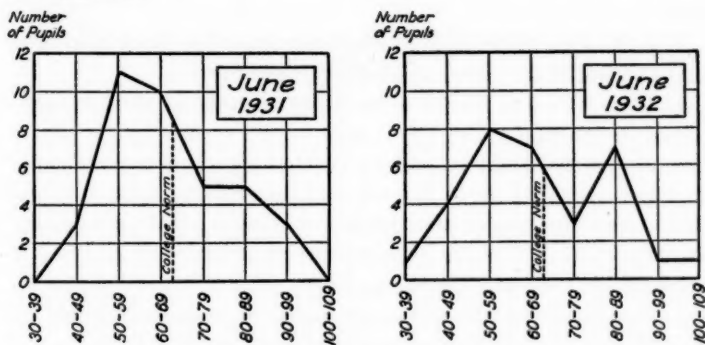


FIG. 2.—Distribution of scores on Noll chemistry test made in June, 1931, and June, 1932, by Joliet high-school Seniors recommended for college credit.

CONCLUSIONS FROM THE EXPERIMENT

On March 20, 1930, the supervising committee of the North Central Association, after visiting Joliet and examining the results of the experiment, presented its report before the Commission on Institutions of Higher Education. Portions of this report are as follows:

The Department of Chemistry in the school has collected convincing factual material, tending to show that twelfth-year chemistry students compare favorably with the general tendencies of university Freshmen as revealed by the standardized tests of the University of Iowa.

The committee finds that there is no characteristic difference between chemistry taught at twelfth-year level and the chemistry taught in the local junior college.

It is understood that students desiring to enter universities submit the number of Carnegie units required for admission. The present recommendation is that, whenever individuals submit the specific requirement in Carnegie units set up by a given university with a full unit in chemistry in addition, they may receive university credit for the chemistry taught at twelfth-grade level, to be counted as credit toward the Bachelor's degree, and as accredited chemistry *pari passu* with the university Freshman credit in equivalent courses.¹

¹ "The Joliet Junior College Experiment," *North Central Association Quarterly*, V (September, 1930), 195.

During the past two or three years many of the leading colleges and universities of the Middle West have given formal approval of the results of the experiment and are granting the credit earned in high-school chemistry in Joliet as recommended by the committee report.

It is the conviction of those who have carried on the experiment that this procedure serves at least a fivefold purpose.

1. It serves as an incentive for a higher grade of work in high-school chemistry.
2. It aids materially in bringing before high-school pupils the nature of a collegiate grade of work and thus enables them to begin their college programs with a better idea of what is before them and with the right type of study habits largely formulated. In brief, it helps hasten their educational maturity.
3. It does away with unnecessary repetition in general chemistry, which is deadly to the better students.
4. It enables the students to secure thorough courses of a year's length in both general chemistry and qualitative analysis prior to the Sophomore college year, at which time quantitative analysis or organic chemistry or both are usually included in a college chemistry program. The writers believe that the year courses mentioned constitute a necessary foundation for any chemistry or closely allied curriculum.
5. Finally, the course thoroughly covers and fits in with the wide variety of courses in the two branches of chemistry named which are in operation in different colleges and universities.

THE PRACTICAL ARTS AND INTEGRATION OF THE CURRICULUM

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Much is being said of the great need for an effective integrating principle in the curriculum. An earlier generation of educators was greatly concerned to offer variety of content materials in order that the seemingly limitless range of differences among individuals might be provided for. New subjects of study, differentiated curriculums, and numerous extra-curriculum activities have, as a result, found their way into the school. Now that the much desired reform has been partially achieved, many view with amazement and anxiety the variegated assortment of teaching subjects and the almost total absence of any principle or controlling idea which serves as an organizing or integrating agent in the mind and the activity of the pupil. The building of curriculums has come to be a most haphazard procedure, and the common complaint of those who critically view the products of the education provided in the schools is, "They seem to have a number of unrelated facts and skills, but they do not seem to know what it all means nor how to make use of their knowledge and skills." Hence, we pause today and attempt to put together the many fragments. Little has been accomplished in this direction, and no one seems to know exactly how to proceed. Thus, we have come to talk much about "integration in education."

Numerous experiments are under way in colleges and universities, but at the lower levels a vast timidity with respect to integration is evident. The problem is not merely concerned with the mechanics of curriculum organization nor basically with the machinery of school management, but, like all major educational problems, it has to do fundamentally with the mind and the emotions of the individual pupil in the school. No idea or procedure can be an efficient agency of integration unless it becomes such in the mind of the pupil. This fact is the great barrier which must be passed before any real unity

of meaning and development among the many school experiences can be had. Such being the case, the question arises: Can integration then be achieved through the use of any single scheme or device? Is not the problem rather concerned with discovering ways of helping each child find some activity, idea, aim, or enthusiasm which will enable him to relate, for himself, his own varied experiences? If such is the conception of integration, then the situation is complex indeed. There seems little room for doubt that we face just this sort of complexity. How, then, can the problem be solved? One would be presumptuous indeed to attempt a categorical answer. It is safe only to suggest tentative approaches to a solution.

If the solution of this problem is to be found in the mind of the individual pupil, obviously the teacher, who deals day by day with its elements, will be an important factor. If the teacher is a narrow specialist, the difficulty is greatly increased. The first step seems to be the training of the teachers that they may clearly see education as a *total* process in which their specialties are merely fragments—meaningless fragments, for the most part, if they are not fitted to all the other fragments. A teacher who conceives of his own subject of instruction as a part of the whole will be able to co-ordinate his work with that of all the other teachers of his pupils. Until improvement is made at this point, little in the way of integration is possible. However, merely to relate the many parts of the school offering does not produce integration. Only when there appears in the mind and the intention of the pupil an organizing center has integration been achieved. This center may be an ambition, an ideal, or merely an interest in some activity or organized body of knowledge. A boy may decide with firm conviction that he wants to follow a certain vocation when he leaves school, and thereafter he deliberately tries to appropriate those portions of his school courses which seem to him to be of value in preparing himself for the chosen vocation. There is probably no more powerful motivation to be found, and a wise teacher can easily make effective use of it. Such a motive may, for that boy, become an effective agency of integration. It will become such all the more surely if all his teachers conspire intelligently to make it thus serve his education. In like manner, an ideal of broad learning or of thorough understanding of some department of knowl-

edge might conceivably become an integration center. Or a boy, having determined to be like his chosen hero, makes the life and the character of that person the loadstone toward which are drawn all available materials from his school experiences.

Probably the most available means of integration which the teachers can use is some intrinsically interesting subject or school activity. Because they are immediately interesting to most children, the practical-arts subjects are among the most effective and easily used for the purpose. These subjects are the representatives in the school of the typical occupations of community life, and few things interest children more quickly and completely than the occupations of the adults of their world. Furthermore, these subjects require skilful work and result in the production of useful and desirable objects. In these respects they are but a short step removed from normal play. The child instantly recognizes the practical-arts activities as belonging to his world of experiences. They are not to him some foolish but supposedly necessary work, such as geography, grammar, and algebra, that grown people force upon children for no understandable reason. Hence, the attitude at once assumed by the pupil toward the practical-arts courses is entirely different from his attitude toward the other school courses. Because of this fact, it is easy for the intelligent, well-trained teacher to utilize the interest so readily available for larger educative purposes than those involved in the mere acquisition of the facts and attitudes relating to the practical arts per se. The inherent character of all the practical arts is such that they impinge on the territory of many important divisions of knowledge. Home economics, for example, reaches into chemistry, physics, industry, business, art, architecture, ethics, sociology, psychology, mathematics, English, history, geography, and hygiene. Similarly, courses in the industrial arts and in agriculture dip into numerous areas of knowledge. Few teachers seem even vaguely aware of this inherent quality of the practical-arts courses, and the result is that the children think of these courses as something quite apart from, and unrelated to, the rest of the school work. Of course, by a labored stretching of minor phases of any of the traditional school subjects, points of contact with other subjects can be found; in the practical arts there is a natural, easily understood, and

most important relation with most of the divisions of study found in the modern school.

If the description of the practical arts just given is accurate, it follows that these subjects may with good reason lay claim to peculiar fitness for the function of integration. There remains the business of capitalizing this fitness through skilful teaching. The typical unit of instruction in the practical-arts courses is the project. All projects worthy of the name involve many bits of fact from a large number of fields of knowledge. To secure from a project its full educative value, the pupil must do his own planning and discover the facts for himself. The necessary facts naturally relate themselves to the purpose uppermost in the pupil's mind; hence, the integrating process is perfectly normal and inescapable—inescapable, that is, when the project is properly conducted. It is just here that the danger lies. The teacher has the responsibility of requiring thorough understanding and mastery of every phase of the project. No guessing and supposing should be permitted. As the necessary related facts are sought, they should be identified carefully as belonging to the experiences of the pupils in the various school subjects. If a project calls for a set of facts from mathematics, the pupil should be led to realize that he of his own need is appropriating in his own project the very things he has been studying in the mathematics course. Incredible as it seems, many pupils fail so to identify their activities. Teachers who have taught shop courses know how seldom pupils think of using the skills and the facts taught in "academic" courses even when these are greatly needed to carry a shop project to completion. This situation is one of the mysteries of the school. Integration, to be a real and progressive experience, should be a conscious experience. Children must consciously bring together and utilize in an orderly and purposive manner the facts and skills they acquire in the various divisions of the curriculum. The practical-arts courses offer an easy and an effective organizing center, but the teacher must do his full duty in stimulating the process of integration in the pupil's mind.

Obviously, the machinery of curriculum-making can be of great value in the promotion of a genuine integration of school experiences. So long as a curriculum is merely a collection of equal units, which,

when added together, equal a curriculum, there can be no such thing as an organizing principle and center. There must be first a center of interest and purpose which will at once appeal with force to the pupil. With such a center established, all the rest must be built around this center in such a manner as to be clearly needed to make the center all it ought to be. Such a procedure doubtless would be too revolutionary and would cut across the pride of too many specialists to be possible in the near future. But wouldn't it be an interesting way to set up a program of school experiences? Suppose we could set up a vitally interesting course in home-making, analyzing the course and finding exactly what English, mathematics, physical science, biological science, social science, and art are genuinely needed to give meaning and success to the program of home-making projects. Then suppose we arranged all the related divisions with that home-making course as the controlling center of organization and all the teachers kept in close contact with the home-making teacher and the progress of her course, relating their work to it day by day. Well, just suppose! The result would probably be genuine integration of learning in the pupil's mind.

Perhaps there are better ways to produce integration of the curriculum, but the practical-arts courses offer a splendid group of centers which are inherently interesting to children and which are very like the major integrating centers of life outside the school.

SPECIALIZED HIGH-SCHOOL CURRICULUMS AS PREPARATION FOR OCCUPATIONS

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One of the pressing questions which administrators in high schools of any size must today face is: With what degree of flexibility shall the curriculum be organized? Of course, a broad philosophy of education usually dictates extreme flexibility, but in actual practice administrators hesitate to alter existing curriculums in large high schools unless surveys reveal a need for specific changes. An important problem to be considered is: How can we justify the multiple-track curriculum wherein a pupil chooses a given course early in his career and follows definite groups of subjects? The answer must be determined by the proportions of graduates of specialized courses who later fill occupational niches related to the school courses they studied.

During the spring of 1932, when forebodings were being voiced concerning the employment being secured by high-school graduates, a decision was made to investigate the occupational experiences of the graduates of the Buffalo Technical High School. In May a thousand post cards were sent out to graduates of the preceding eight years. In the case of graduates who had completed high school more than three years earlier, post cards were sent only to those whose addresses could be checked in the directory of the city of Buffalo and vicinity.

In an endeavor to secure replies representative of the entire group, two appeals were expressed on these post-card questionnaires. One appeal made an effort to persuade the employed graduates that students of educational problems were seeking the basic facts about occupations and that the graduates alone possessed the information of value. The other appeal stated that the committee wished to assist the unemployed graduates. The items of information request-

ed included the name and the address of the graduate's employer, salary, length of service, occupation, education in higher institutions, and previous employment record. Space was allowed for detailed information regarding the specific duties and activities engaged in by the employed graduate in his occupation. Two hundred and six post cards were fully answered and returned. Sixty-one additional records were obtained from graduates by personal solicitation during an annual exhibit held at the high school. The trend of the data for the additional sixty-one cases followed that of the larger number of cases, and consequently both groups were combined for classification purposes.

As only forty-three of the thousand post cards were returned by the post-office, it was recognized that a rather small proportion of responses had been received. Data were available which permitted one reliable check on the selection obtained. Investigation of the registration in colleges of all our graduates securing transcripts during the years 1926-30 revealed that 98 of a total of 838 graduates were students in good standing in accredited institutions. Of the 267 questionnaire returns, 44 were from graduates attending colleges. The difference in percentages is 2.8 times the probable error of this difference. Hence, there is a barely significant difference between the percentage of students attending colleges who responded to the questionnaire and the percentage of graduates enrolled in colleges. There was possibly a slight tendency for the more successful graduates to respond. Caution must be used also in interpreting certain of the following observations and conclusions owing to the fact that the small sample may include unduly large proportions of certain occupational groups.

If the data given in Table I are scrutinized with a view to answering the problematic situation existing in the curriculum, it appears that, out of twenty-four boys graduated from the machine-design course offered in the Buffalo Technical High School, for example, ten succeeded in obtaining employment in the field of drafting applied to machine design. The large number of unemployed graduates of each course explains in a measure why larger proportions of graduates were not found in the work for which they had prepared. Nevertheless, the most significant fact revealed is that the pupils graduat-

ing from the technical courses consistently follow the specialties for which they prepared. The outstanding exception to this rule is found in the case of the building-design course. The condition of the building trades in this period is sufficient explanation for this exception.

The large number of graduates from the general course who entered technical fields may cause speculation as to the value of

TABLE I
DISTRIBUTION OF 267 GRADUATES OF VARIOUS SPECIALIZED HIGH-SCHOOL COURSES
ACCORDING TO OCCUPATION AFTER GRADUATION

| OCCUPATION AFTER GRADUATION | NUMBER OF GRADUATES | | | | | | | Total |
|---|------------------------------|-------------------------------|----------------------|---------------------|---------------------------------|-----------------------------------|-------------------|-------|
| | Machine- Design Course | Building- Design Course | Electrical Course | Chemistry Course | Commercial- Design Course | College- Preparatory Course | General Course | |
| Miscellaneous trades and industries. | 2 | 1 | | | | | 5 | 8 |
| Technical occupations: | | | | | | | | |
| Machine drafting or related work. | 10 | 1 | 1 | | | 3 | 3 | 18 |
| Building design or related work. | | 8 | 1 | | | 1 | 6 | 16 |
| Electrical or related work. | | | 26 | | | | 11 | 37 |
| Chemical or related work. | | | | 14 | 1 | | 3 | 18 |
| Commercial design or related work. | | | | | 5 | | 1 | 6 |
| Commercial occupations of all descriptions. | 2 | 7 | 2 | 2 | 2 | 2 | 11 | 28 |
| Attending higher institutions of learning. | | 4 | 7 | | 6 | 14 | 13 | 44 |
| Teaching. | | | 2 | | 1 | 1 | 5 | 9 |
| Professional pursuits. | | | | | | 1 | 3 | 4 |
| Unclassified occupations. | 1 | 3 | 2 | 1 | | 3 | 1 | 11 |
| Unemployed. | 9 | 14 | 17 | 3 | 3 | 7 | 15 | 68 |
| Total. | 24 | 38 | 58 | 20 | 18 | 32 | 77 | 267 |

specialization. Careful study of these cases showed that most of these persons had studied the subject matter of the technical courses but that, after they had failed to pass examinations, they were graduated in the general course.

If it may be assumed that a larger sampling would have augmented the tendencies observed in the selection described, the conclusions may be summarized as follows:

1. Fifty-nine per cent of all the graduates responding were employed, 25 per cent were unemployed, and the remaining 16 per cent were attending higher institutions of learning.

2. In Buffalo better opportunities seem to exist for graduates who have specialized in chemistry than for those who have specialized in electrical and building-design courses.

3. The multiple-track curriculum seems to be justified in this school since a preponderant number of graduates are employed in occupations for which they were prepared in specialized courses.

4. The fact that a significant number of graduates enter commercial activities should be recognized as a serious problem in all technical and vocational schools offering specialized curriculums. It is the duty of these schools to offer a more liberal opportunity than is now available for those who will enter commercial fields. The success of the other special fields in fitting graduates for definite routines suggests that a commercial course, or at least commercial subjects, should be made a part of the curriculum.

SELECTED REFERENCES ON SECONDARY- SCHOOL INSTRUCTION

I. CURRICULUM, METHODS OF TEACHING AND STUDY, AND SUPERVISION

LEONARD V. KOOS
University of Chicago

This list of selected references is the first of a series of ten, previously announced, to be published in the ten issues of the *School Review* for 1933. Combined with lists to be published in corresponding issues of the *Elementary School Journal*, the series will comprise a cycle covering practically the whole field of education. Earlier announcements have indicated that the cycle will be, in effect, a continuation of the *Record of Current Educational Publications*, which has been issued in recent years as a quarterly bulletin by the United States Office of Education and publication of which has been suspended as a measure of economy. Readers interested in a prospectus of the complete cycle, including the list of topics and the names of the collaborating specialists, are referred to the December issue of the *School Review*.

The present list is the first of three to be devoted to secondary-school instruction, the term "instruction" as here used comprehending its three main phases, namely, curriculum, methods of teaching and study (not including items properly classifiable under the psychology of learning), and supervision. The organization of this list follows this three-part division of what may appropriately be regarded as a single domain. The items are general; that is, they apply to any or all subjects. The lists in the February and March *School Review* will be classified by subject fields and have been prepared by thirteen subject specialists. The term "secondary school" as applied to these lists extends from the beginning of the junior high school through the junior college.

The lists begin in point of time with the close of the period covered

by the last published *Record of Current Educational Publications*, that is, January to March, 1932, inclusive. The items for the second quarter (April to June, inclusive) introduced in the present list were largely selected and annotated by O. I. Frederick,¹ at the time on the staff of the National Survey of Secondary Education in the Office of Education, the work having been done before it was known that funds would not be available for continuing the *Record*. The brevity of the list is explained by the short period covered—with the exception of a few more recent items, April to October—and by the lull in publication characteristic of the summer interval.

CURRICULUM

1. BOARDMAN, CHARLES W. "Curriculum Revision in the Light of the Survey," *North Central Association Quarterly*, VII (September, 1932), 233-36.

The author, on the basis of the paper by Loomis listed below, gives helpful suggestions for a program of curriculum activity for the North Central Association.

2. BROADY, KNUTE O., and PLATT, EARL T. "Practical Procedures for Enriching the Small High School Curriculum," *School Executives Magazine*, LI (May and June, 1932), 393-95, 454-56.

Discusses alternation of classes, scheduling of classes, individualization, correspondence study, combination of classes, supplementary assignments, and rate of progress.

3. *Curriculum Making in Current Practice: A Report of a Conference Held at Northwestern University, October 30-31, 1931*. Evanston, Illinois: School of Education, Northwestern University, 1932. Pp. 244.

Papers and abstracts of papers presented at a university conference on curriculum-making. Both elementary and secondary levels are represented.

4. DALE, EDGAR. "Outlining the Course of Study," *Educational Research Bulletin*, XI (October 26, 1932), 347-50.

Describes briefly a plan of curriculum revision followed under the author's direction at Aurora, Ohio.

5. FRENCH, WILL. "Is the Junior High School Making Good?" *Junior-Senior High School Clearing House*, VI (April, 1932), 461-69.

Devoted for the most part to trends in the offering in junior high school grades and concludes that reorganization is effecting enrichment of the curriculum.

¹ On items published since June 30 the present writer has had some assistance from F. A. Beu, graduate student at the University of Chicago.

6. FRENCH, WILL. "The Survey and the Reconstruction of Curricula," *North Central Association Quarterly*, VII (September, 1932), 229-32.
A constructive discussion of certain implications of the paper by Loomis listed below.
7. GRIFFING, JOHN B. "The Cultural Element in Junior College Education," *California Quarterly of Secondary Education*, VII (June, 1932), 352-64.
A consideration of certain factors affecting policy concerning the curriculum in the junior college.
8. HARAP, HENRY, and BAYNE, ALICE J. "A Critical Survey of Public School Courses of Study Published 1929 to 1931," *Journal of Educational Research*, XXVI (September and October, 1932), 46-55, 105-9.
Referred to by the authors as an "inventory of the status of the curriculum-making movement, as far as it is reflected in the published courses of study of city and state school systems." Of the 317 courses analyzed, 177 are secondary-school courses.
9. LOOMIS, ARTHUR K. "The Curriculum and the National Survey," *North Central Association Quarterly*, VII (September, 1932), 219-28.
A preliminary presentation of certain findings of the curriculum projects of the National Survey of Secondary Education.
10. NEWLON, JESSE H., BRUNER, HERBERT B., HOPKINS, L. THOMAS, HANNA, PAUL R., and DIX, LESTER. "The Curricula of the Schools," *Report of the Survey of the Schools of Chicago, Illinois*, III, 4-112. New York: Teachers College, Columbia University, 1932.
Chapter iii (pp. 48-73) is devoted to "The Secondary School Curriculum."
11. PATERSON, HERBERT. "Trends in the Offering of Oklahoma High Schools, 1921 to 1931," *Peabody Journal of Education*, IX (May, 1932), 349-54.
Compares data in two bulletins issued by the Oklahoma State Department of Education. The bulletins report the number of standard units offered by high schools in the state in each of the subjects.
12. PHILLIPS, EVELYN BUTLER. *An Analysis of the Curricula of the Small High Schools of Maine*. University of Maine Studies, Second Series, No. 23. Orono, Maine: University of Maine Press, 1932. Pp. 90.
An analysis of the programs of studies in 106 small four-year high schools in Maine, which is helpful by emphasizing once more the inadequacy of the small school.
13. *Report of a Study of the Secondary Curriculum*. Milton, Massachusetts: Secondary Education Board, 1932. Pp. 240.
A book of suggestions for improving courses of study in the different subject fields in Grades VII-XII. Prepared under the direction of a general committee of the Secondary School Board, an organization comprised of 140 "independent" schools.

14. WIGGINS, D. M. "Curriculum Problems of Small Rural High Schools in Texas," *School Review*, XL (June, 1932), 460-66.
Reports and discusses courses offered in 140 high schools of Texas enrolling 50 or fewer pupils.
15. WOODY, CLIFFORD. "The Subject in the Modern Curriculum," *University of Michigan School of Education Bulletin*, III (May, 1932), 115-17.
A discerning brief discussion of the place of the subject in the curriculum.

METHODS OF TEACHING AND STUDY

16. ANDREWS, GEORGE A. "Study Training in the Junior College," *Junior College Journal*, II (April, 1932), 385-89.
Describes the program of training in study as worked out in the Principia, St. Louis, Missouri.
17. BILLET, ROY O. "Plans Characterized by the Unit Assignment," *School Review*, XL (November, 1932), 653-68.
An illuminating and informative summary of one portion of the project of the National Survey of Secondary Education investigating provisions for individual differences—the portion dealing with procedures characterized by the unit assignment, namely, the project method, the problem method, differentiated assignments, long-unit assignments, the contract plan, the laboratory plan, individualized instruction, the Morrison plan, the Dalton plan, and the Winnetka technique.
18. CLARK, CLARENCE C. "Sound Motion Pictures as an Aid in Classroom Teaching," *School Review*, XL (November, 1932), 669-81.
The report of a carefully conducted experiment in the use of sound pictures, silent films, and lecture demonstrations at the junior-college level.
19. CLEM, ORLIE M. "Fundamental Elements in Junior High School Instruction," *Educational Method*, XI (June, 1932), 521-30.
Deals with the provision for individual differences, problem or project method, socialized recitation, supervised study, recognition of a major objective for each field of study, new-type tests, personality of the teacher, and education as growth.
20. CURTIS, FRANCIS D., and DARLING, WESLEY C. "Teaching Values of Common Practices in Correcting Examination Papers—A Second Study," *School Review*, XL (September, 1932), 515-25.
A report of an experiment to find the best of four methods of correcting short-answer examination papers, the methods involving correction of papers by the pupil himself and by other pupils.
21. GOINS, J. L. "The Utilization of Blackboards by High-School Teachers," *School Review*, XL (May, 1932), 381-86.
A study of the extent of the use made of blackboards based on records kept for ten days by teachers in secondary schools of four cities in Wyoming.

22. JOHNSON, PALMER O., and UMSTATTD, J. G. "Classroom Difficulties of Beginning Teachers," *School Review*, XL (November, 1932), 682-86.
Presents a ranking, based on judgments by superintendents in Minnesota on frequency of occurrence, of classroom difficulties of beginning teachers.
23. LEVINSON, SYLVIA R. "The Open Textbook Method," *High Points in the Work of the High Schools of New York City*, XIV (September, 1932), 68-70.
The values, possibilities, and methods of teaching when pupils in the classroom have textbooks open before them are briefly considered by one who has been following the plan.
24. MONROE, WALTER S., and OTHERS. *Special Methods on High-School Level*, Review of Educational Research, Vol. II, No. 1. Washington: American Educational Research Association of the National Education Association, 1932. Pp. 1-94.
Educational research on special methods in each subject field is reviewed by a specialist in the field.
25. REEVES, CHARLES EVERARD. *Standards for High School Teaching: Methods and Technique*. New York: D. Appleton & Co., 1932. Pp. xii+558.
A comprehensive, practical treatment for secondary-school teachers in training designed to co-ordinate classroom courses in methods and the work of observation and practice teaching. Accompanied by a *Workbook in High School Observation and Practice Teaching*.
26. RUEDIGER, WILLIAM CARL. *Teaching Procedures*. Boston: Houghton Mifflin Co., 1932. Pp. xvi+472.
A systematic treatise on procedures in teaching involving what the author terms the "direct attack" on the objectives to be realized from learning, rather than an indirect attack through definitions, rules, formulas, and the like. Suitable for use as a textbook or reference in courses in general methods of teaching and for reading by teachers and supervisors.
27. STEGMEIR, CLARENCE. "The Student Secretary," *School Review*, XL (April, 1932), 295-301.
Student secretaries were appointed to facilitate the use of individual instruction at Thornton Township High School at Harvey, Illinois. Discusses the selection of secretaries, their duties, their attitude toward the work, and the merits of the plan.
28. WOODRING, MAXIE N., and FLEMMING, CECILE WHITE. "Directing Study through the Assignment," *Teachers College Record*, XXXIII (May, 1932), 673-95.
A constructive treatment, with much illustrative material, of the place of the assignment in effective study.

29. WRINKLE, WILLIAM L., and ARMENTROUT, WINFIELD D. *Directed Observation and Teaching in Secondary Schools*. New York: Macmillan Co., 1932. Pp. xvi+400.

Deals with such matters as the professional preparation of teachers, classroom management, aims and objectives, assignment, motivation, directing learning, methods of teaching, providing for individual differences, and measurement of results. Intended for use in the training of teachers.

SUPERVISION

30. BURTON, W. H. "What Could a Director of Teaching Do in a High School?" *California Quarterly of Secondary Education*, VIII (October, 1932), 51-52.

A brief description of scope and type of service of the director of teaching in a large high school.

31. COX, PHILIP W. L. "Principles for Stimulating, Releasing, and Capitalizing the Creative Energies of Teachers," *California Quarterly of Secondary Education*, VII (April, 1932), 248-52.

An abstract of an address before the Department of Supervisors and Directors of Instruction of the National Education Association. The principles presented merit serious consideration.

32. KLOPP, W. J. "Releasing the Creative Power of Teachers," *American School Board Journal*, LXXXV (July, 1932), 31-32.

A description of the operation of the plan of supervision in the Woodrow Wilson High School in Long Beach, California, in which there is one director of teaching without the usual heads of departments.

33. KNUDSEN, CHARLES W. *Evaluation and Improvement of Teaching* (In Secondary Schools). Garden City, New York: Doubleday, Doran & Co., Inc., 1932. Pp. x+538.

Considers (1) establishing a basis for evaluating instruction, (2) methods for evaluating and improving instruction, (3) inaugurating and continuing a supervisory program, and (4) evaluating the supervisory program. A clear, effectively organized, and practical treatise.

34. LANDSITTEL, F. C. "Service versus Authority in High School Inspection," *High School Quarterly*, XX (April, 1932), 109-13.

Like the item by Rosenlof below, a discussion of the function of state supervisors of secondary education.

35. OVERN, A. V. *A Survey of Instruction and Supervision, East Grand Forks, Minnesota*. School of Education Bulletin, No. 10. Departmental Bulletin of the University of North Dakota, Vol. XV, No. 5. Grand Forks, North Dakota: University of North Dakota, 1931. Pp. 80.

Deals with grade placement, achievement by grades, analysis of progress made by pupils in subject matter as measured by results before and after campaign for

improvement, and supervisory organization. Not restricted to the secondary-school level.

36. NEAL, ELMA A. (Chairman). *Supervision and the Creative Teacher*. Fifth Yearbook of the Department of Supervisors and Directors of Instruction of the National Education Association. New York: Teachers College, Columbia University, 1932. Pp. x+348.

Deals with both elementary- and secondary-school levels. Considers principles and procedures for releasing creative energies of teachers and presents case studies of creative activities of teachers.

37. ROSENLOF, G. W. "The Most Effective Distribution of Our Services as High School Inspectors and Supervisors," *High School Quarterly*, XXI (October, 1932), 19-26.

A discriminating discussion of the functions of state supervisors of secondary education.

38. SKIDMORE, H. M. "Supervision of Junior College Instruction," *Junior College Journal*, II (June, 1932), 542-46.

The dean of instruction of the Sacramento Junior College discusses the possibilities and means of improving instruction on the basis of two years of experience in the work.

Educational Writings

REVIEWS AND BOOK NOTES

The making of political citizens.—The need for more vital and effective training in political citizenship is recognized by all students of our contemporary political life. On every side the evidences of such need are all too apparent. During an important political campaign a few years ago, four of the beautiful communities that adorn the shore of Lake Michigan just north of Chicago—communities inhabited largely by “best citizens”—engaged in a contest, supported by the local civic organizations, to see which community could persuade the largest percentage of its voters to participate in the approaching election. Kenilworth, the winner of the contest, succeeded in getting only 47.1 per cent of its voters to turn out for the election; Winnetka, 44 per cent; Glencoe, 39.4 per cent; and Wilmette, 38.7 per cent. Similar incidents might be cited in all parts of the country; in the latest national election (1932), for instance, fewer than 60 per cent of the voters took the trouble to go to the polls.

The remedy for such conditions, according to Professor David Snedden,¹ is to be found in effective education for political citizenship. At the present time, he declares, American secondary schools do not prepare their students for a better political life “because these high schools have not yet been supplied with teachers of political citizenship” (p. 4).

Our teachers, he maintains, are subject-matter specialists. The social sciences in the curriculum—history, civics, problems of democracy, economics—lack standardization of content or method, and the teachers who present these subjects have not had the special training required to enable them to give instruction in such subjects. He insists that superior political citizenship can and should be taught directly, and he decries such “ideologies” as, “‘All teachers are teachers of citizenship,’” and “‘Any subject can be taught so as to enhance good citizenship’” (p. 6).

Professor Snedden suggests that 10 per cent of the school time be devoted to direct civic instruction, that a series of “short courses” be worked out embracing the operations of the public services which are performed by our gov-

¹ David Snedden, *Educations for Political Citizenship: A Critical Analysis of Certain Unsolved Problems of School Educations toward Superior Memberships in Democratic Political Societies*. New York: Teachers College, Columbia University, 1932. Pp. x+196. \$2.50.

ernments and stressing first of all the functions of local governments. So far as details are concerned, he declares:

It is not yet practicable to name, or even briefly to describe, the content of "courses" or "studies" appropriate to produce civism [*sic*]. In part such courses must utilize directed and purposed junior civic activities—as now to a degree in scouting, school government, and, possibly, group competitive sports. In part they must draw upon contemporary diffusions of knowledge, opinion, and aspiration—as now in "current events," directed journal reading, etc. In part they must utilize dramatic presentation—as now in flag salutes, pageantry, and dramatization of naturalization processes, court trials, legislative sessions, and the like. In part . . . they must use "problem methods" . . . designed to initiate and extend sound, critical "thinking" about current problems. In part, too, such courses must draw upon the documented histories and formulations of economics, political science, ethical ideals, and sociology now available [p. 12].

Professor Snedden's major contribution in this volume is his insistence on the need for trained teachers of political citizenship, who shall be as well prepared for their work as teachers of chemistry, geometry, and history are prepared for theirs. His interest seems to lie largely or wholly in education that will function in adult life in "high-principled and intelligent civic participations" (p. vi); he gives little or no attention to that larger citizenship that functions in the everyday living of boys and girls, as well as of adults, looking upon such education as outside the field of government. His advocacy of effective and specialized education for political citizenship is greatly needed and will be welcomed by all who are concerned with the betterment of our civic life.

HOWARD C. HILL

Principles and procedures in guidance.—The volume under review¹ represents the summary of findings from questionnaires returned by 150 cities relating to their vocational-guidance set-up and counseling practices. The following topics are treated: principles and practice, study of the individual, counseling, scholarships for children, occupational studies, curriculum work, individualized opportunities, junior employment service, and special problems in vocational guidance. The book also includes (1) a seven-page bibliography covering the current literature in the field of vocational guidance and (2) seventy pages of appendixes covering the questionnaires used in the inquiry and supplementary data on the six main topics dealt with in the main body of the report.

Under each main topic the gleanings from the questionnaires are reported, and at the end of each such treatment is a page or more of findings and recommendations. The section on the study of the individual recommends the adoption of a cumulative record card after the model prepared by Ben D. Wood for

¹ *Vocational Guidance*. Report of the Subcommittee on Vocational Guidance, M. Edith Campbell, Chairman. Section III, Education and Training, White House Conference on Child Health and Protection. New York: Century Co., 1932. Pp. xxiv + 396. \$3.00.

the Pennsylvania secondary schools and colleges, as well as the employment of psychological tests, achievement tests, and personality rating scales. The section on counseling gives an excellent summary of the status of counseling in the 150 cities making reply. Ninety-nine of the cities had counselors, and fifty-one had not. Two hundred and forty-six full-time counselors and 639 part-time counselors were employed, or 885 all told. In the small and the medium-sized cities the committee found that there was one counselor to each 1,500 persons in the school population and in the large cities one counselor to about 3,300 persons in the school population. The need for more counselors seemed evident. In thirty-eight of the ninety-nine cities having counselors, these officers had no other duties. In sixty-one of the cities the counselors taught classes in occupations, made occupational studies, or did both, in addition to their counseling duties. In this section also there is material on counseling methods, training of counselors, and counseling programs.

At the conclusion of the section on occupational studies it is recommended that such studies be made a definite part of every program and that there should be a national clearing-house for occupational information. The list of occupational pamphlets concluding this section is unusually complete.

The place of guidance in the curriculum is taken up with a discussion of the types of courses related to guidance activities, such as home-room orientation courses and classes in occupations. One hundred and five of the cities replying have classes in occupations or in home-room educational information. The seventh, eighth, and ninth grades register 84 per cent of such classes, the ninth grade having almost as many as the other two grades combined. Educational guidance, methods of teaching, training of teachers for occupations classes, and illustrative material are among the other topics touched on. The recommendation is made that curriculum work in the field of vocational guidance should be carefully supervised and co-ordinated with other features of the guidance program.

Emphasis is placed, in the section on individualized opportunities, on the rapid changes taking place in industry with the corresponding implications for the training of workers. The longer schooling, with consequent later entrance into vocational life, implies greater attention on the part of the school to preliminary or basic vocational training. The desirability of training for fields of gainful effort rather than narrow specialization is emphasized. Specifications for an effective program of vocational education are laid down. The committee found that junior employment service is carried on for the most part in the larger cities—in 21 per cent of the cities reporting with populations under 50,000, in 41 per cent of the cities with populations of 50,000 to 99,000, and in 75 per cent of the cities with populations of over 100,000. Especially in the larger cities the placement bureaus of the city co-operate closely with state and national bureaus. Vocational counseling and placement, methods of conducting junior placement service, the interview, record-keeping, and co-operation with community agencies are other topics treated.

The final section deals with the special problems of vocational guidance in relation to various racial groups, and certain specialized types of institutions, as well as religious organizations and service clubs.

The book is a valuable compendium of information about vocational guidance in city school systems. The point of view is that vocational guidance covers all essential phases of the guidance movement, so that educational guidance, ethical and social guidance, etc., can be adequately treated or organized under bureaus designated as "vocational-guidance bureaus." Whether or not one agrees with this general point of view, it is easy to conclude that the committee has made a real contribution to the literature of guidance. The volume should be on the reference shelf of every institution which is training counselors.

WILLIAM MARTIN PROCTOR

LELAND STANFORD UNIVERSITY

A diagnostic chemistry test in the making.—Too often standardized tests are marketed with scanty information concerning the method of their construction and with insufficient data on which to estimate their true worth. A pleasing exception is a doctoral dissertation¹ which describes minutely each step in the construction of a diagnostic test in certain phases of high-school chemistry. Teachers of the subject will be in possession of a valuable teaching aid when the test is issued commercially.

After defining his problem, the author describes his procedure, establishes the validity of his test questions, presents numerous tables showing the results from preliminary forms, explains how certain faults were corrected, and discusses the possible uses of his test in classroom teaching. The book's contributions to the subject of measurement are the clear expositions of the difficulties inherent in the making of a diagnostic test and the manner in which they were overcome.

The test is not intended to measure knowledge of the whole field of high-school chemistry but only to measure knowledge in mechanics and related fundamentals, specifically, the properties of gases, the principles of valence, the writing and naming of formulas, the writing of equations, the solving of numerical problems, ionization, and knowledge of the laws and the theories directly related to these items. The author's exhaustive analysis of types of errors and the reasons therefor in this especially difficult aspect of chemistry is a distinct contribution to methodology. To establish validity, two main criteria were chosen, a page-by-page analysis of six commonly used textbooks and an intensive study of types of errors made by pupils on various preliminary forms.

That the final forms will possess definite diagnostic values may be seen by comparing Malin's discussion with the criteria set up by Ruch and Stoddard as characteristics of genuine diagnosis. The particular skills involved are separately analyzed and then measured, and they are shown to follow teaching prac-

¹ Joseph E. Malin, *Construction of a Diagnostic Test in the Mechanics and Related Fundamentals of High School Chemistry*. Philadelphia: University of Pennsylvania, 1932. Pp. 262.

tices and needs. The specific diagnostic values of each test item are clearly stated. An unusually complete and helpful corrective program is outlined. Norms, as such, are not provided but may be obtained from the tables. When the test is printed for commercial use, norms should perhaps be provided, although they seem less essential in a diagnostic test than in an achievement test. Since the test is at present in a semi-standardized form, it does not meet the criterion that its score should be reliable enough for individual as contrasted with group measurement. However, this would seem to be a statistical refinement rather than a practical need. In place of statistical concepts, Malin prefers a tabulation of errors as an expression of individual and class diagnosis and describes in detail how teachers may use such tables.

A few criticisms may be noted. There seems to be no good reason why more attention should not have been given to establishing the statistical reliability of the two forms and to equating them in difficulty. The comparatively small number of pupils involved and their concentration in three states raise some question concerning the usefulness of the test on a country-wide basis. The emphasis on the College Entrance Board examinations may not be understood except by teachers preparing students for those examinations. The inclusion of helium and more particularly of argon as two of the five gases whose properties are to be described may be questioned. The book could be read more easily had page instead of table references been given. These criticisms, however, do not detract from the general value of the book as a most helpful source of teaching suggestions.

ROBERT D. COLE

UNIVERSITY OF NORTH DAKOTA

Poems by secondary-school pupils.—Almost all collections of the writings of high-school pupils heretofore published for general circulation have consisted of the poems, stories, essays, etc., written in this school or that as a result of the teaching of individual instructors. Moreover, most of this creative writing, at least that part of it which has been given the widest publicity, has emanated from certain types of private schools, particularly from those of the professed "progressive" variety. The teachers of these schools have justifiably exhibited the writings of their own pupils as evidence of the results of the kind of composition-teaching which they have practiced and for which they have stood. These exhibits have served a most significant purpose. They have illustrated what boys and girls *can* do in the way of writing and what they are interested in doing, once a liberalized program of composition-teaching has been offered them. All along there has been, however, a tendency to carp and doubt on the part of English teachers of the more academic and traditional types. These teachers have perennially uttered a more or less stereotyped, albeit implicit, defense of their own illiberal procedures and attitudes by saying what amounts to the following: "Of course, these carefully selected pupils write well, interestingly, and

individually. If I had boys and girls like them, I too could get such results." The facts to which teachers of this kidney close their eyes are too manifest to require discussion in so brief a review as the present one.

*Younger Poets*¹ is an effective breeze for such smoke screens as that just noted. This book consists chiefly of poems written by high-school pupils from every state in the Union. Public-school and private-school pupils are represented. The poems have come from institutions as different from each other in purpose as the strictly college-preparatory, the public, and the avowed progressive schools. Poems from pupils of more than a score of nationalities and race extractions are included. Almost every conceivable contemporary American social and environmental situation has its youthful voice in the collection. In short, *Younger Poets* is a conclusive demonstration of the fact that no particular type of school, no particular race, no particular social stratum, no particular environment has a corner on creative capacity. The book is likewise a conclusive demonstration of the fact that in a liberal and enlightened composition atmosphere young people of our own time view poetry, as have young people of all eras of the past, as one of the most effective and pleasing vehicles for the individual interpretation of various phases of life and as one of the most satisfactory means man possesses of clarifying meanings for himself and his fellows.

In addition to approximately 350 pages of the really excellent verses of these younger poets, the anthology contains a series of definitions of poetry, an introduction called "Some Suggestions for the Writing of Poetry," a pertinent and useful bibliography, and, most interestingly, brief biographical notes on the writers whose poems are included in the volume.

Younger Poets is certain to be of interest and stimulative worth to teachers of high-school and college English and to their students.

OHIO STATE UNIVERSITY

HOWARD FRANCIS SEELY

Advertising as a career.—Vocational guidance has attracted sufficient attention in recent years to prompt numerous writers to publish material about vocations. Several hundred volumes treat of the vocation of advertising alone. Many of these books offer a general description of the entire field of advertising; others deal with a single phase of this type of work. The purpose of a new volume² is to analyze the major positions in advertising today; to discuss the natural aptitudes, the training, and the experience essential to enable a person successfully to carry on in a given position; to describe the everyday duties; and to explain the reasons why a job or a group of jobs exists and how it fits into the whole structure of advertising or business. The scope of the volume is at once

¹ *Younger Poets: An Anthology of American Secondary School Verse*. Edited by Nellie B. Sergeant. New York: D. Appleton & Co., 1932. Pp. xii+436. \$2.00.

² *Careers in Advertising and the Jobs behind Them*. Edited by Alden James. New York: Macmillan Co., 1932. Pp. xxiv+678. \$5.00.

broader and more detailed than any book on this subject which the reviewer has read to date. Some sixty men and women who have made noteworthy successes of their fields of specialization in advertising have contributed to it. Apparently, no phase of work which might in the slightest way be thought of as advertising has been overlooked.

From the standpoint of vocational guidance, the large number of contributors naturally causes a great variation in the effectiveness of the writing. How the contributions vary is hardly to the point. In general, the volume fulfills the purpose stated by its editor. The analyses of the various jobs in advertising are so detailed and, in the main, so clearly presented that anyone would profit by reading them, even the person already engaged in this vocation who desires to study other branches of the field. The book can be read with understanding by senior high school and most likely by junior high school pupils. For college students it offers more than a picture of a vocation; it presents an outline for training. Educational counselors, teachers of commercial subjects, and school librarians should find the contents of this volume interesting and valuable.

ROBERT C. WOELLNER

Help for the teacher of business arithmetic.—The situation in business arithmetic presents what is probably the most puzzling of the many problems in the commercial curriculum. The complaint that graduates from the secondary schools who enter business are deficient in arithmetical abilities is still common. The increase in enrolment in business arithmetic, almost tenfold during the past decade, has accomplished little to lessen this criticism. Carefully conducted investigations, involving extensive measurement of the results of classroom instruction in business arithmetic, have usually revealed little worthwhile achievement. In at least one state the subject has been dropped from the commercial curriculum as a result of such an investigation.

On the assumption that a large part of the difficulty of the problem in business arithmetic arises from a lack of professional preparation on the part of the teachers of the subject, Lomax and Neuner have recently contributed a book¹ intended as a classroom manual of practical helps for teachers of this subject. This volume follows the same formula in its organization as that used by Lomax in the former books of the "Problems" series in commercial subjects. About one-third of the volume is devoted to problems of classroom procedure. Other principal topics treated are the aims and the functions of business arithmetic, problems of subject matter, and measurement of the results of teaching.

No assumption is made as to the teacher's previous professional preparation. The related topics in educational psychology, curriculum construction, and

¹ Paul S. Lomax and John J. W. Neuner, *Problems of Teaching Business Arithmetic: A Classroom Manual of Practical Helps for Teachers of This Subject in Public and Private Secondary Schools, Junior Colleges, and Teacher-training Institutions*. New York: Prentice-Hall, Inc., 1932. Pp. x+184. \$1.25.

classroom management are considered in detail as they arise. A valuable service is rendered by the authors in bringing together the available reference and supplementary material and in presenting problems that still remain unsettled.

The deficiencies of the book are those that might be expected when an attempt is made to cover, in a single volume of limited size, a field so broad in its scope and implications. The chapter on measurement of the results of instruction, for example, is very inadequate and might well have been omitted. It throws little light on the problem of measurement in commercial arithmetic, and a satisfactory treatment of the new-type examination is impossible in a chapter of fifteen pages.

The work also suffers from the attempt to follow a standard formula in outlining the problems of the subject. The subjects of the commercial curriculum are too diverse in their aims and content to yield satisfactorily to such general treatment. Many problems peculiar to business arithmetic are either slighted or omitted entirely. This neglect becomes particularly apparent in the treatment of the aims and the functions of the subject. It is probably also a result of this adherence to a fixed formula that the authors have overlooked a golden opportunity to assist in bringing the out-of-date terminology of business arithmetic into conformity with modern business usage.

In spite of these limitations, this book is probably the best work of its type in the field of business arithmetic, and it represents a real contribution to the literature on the subject.

LUCIEN B. KINNEY

UNIVERSITY OF MINNESOTA

Comparative education.—The student of comparative education is often at a loss when he is in need of statistical information or reliable data on the organization of a foreign school system. Usually such information is incidentally buried in articles, bulletins, or books dealing with school matters as they relate to the history, culture, and social life of the particular country. Such literature is often widely scattered, is printed in a language not mastered by the student, or is given in a manner not directly comparable with similar data from other countries. The lack of an up-to-date, encyclopedic, uniform treatment of statistical and structural conditions of the recent educational systems of various countries has fortunately been removed by the publication of a volume¹ of 374 pages by the International Bureau of Education in Geneva. The book deals with the organization of public education in fifty-three countries.

The collection of material for the publication was initiated by a request to the bureau from M. Herriot, at that time minister of public instruction in France, for information on the regulations in the different countries as to the transition of students from elementary to secondary instruction and from sec-

¹ *L'organisation de l'instruction publique dans 53 pays*. Geneva, Switzerland: Bureau International d'Education (44 Rue des Maralchers), 1932. Pp. xii+374.

ondary instruction to higher educational institutions. Visualizing the importance of the transition problem, the bureau not only compiled the documentary material it already had collected but, for purposes of verification and completion, sent out questionnaires to the ministries of education of the various countries requesting the same information.

The fruits of this careful collection of data are embodied in the volume under review. Each of the presentations pertaining to a particular country consists of the following parts: (1) a short synopsis containing information on the total population, the population of school age, the percentage of the population of school age attending school, and the compulsory-age limits of schooling; (2) a short description of the organization of preschool, elementary, secondary, higher, and professional education, especially that of teachers' training; (3) a summary of the practices of examinations and promotions of pupils; (4) a brief extract of the school statistics; and (5) a short list of references sufficient for a first approach and introduction to the study of the educational system of the country in question.

The textual material is supplemented by sixty-one diagrams depicting graphically the different types of schools, their structural connection, and their length in terms of ages and grades.

The surveys of the various educational systems are admirably accurate and are uniformly summarized. The statistical data, usually taken from the latest official school census of the particular country, seem reliable. Especially helpful in the study of more complicated systems are the ingeniously arranged diagrams.

Probably the only criticism which can be made concerns the different bibliographical references. These seem to represent an accidental collection rather than a systematic enumeration of the best sources available. As a first attempt to summarize uniformly and accurately such diverse information as pertains to the organization and statistics of many school systems, the present volume must be called a success, and it will, without doubt, be assigned an important place in the literature of comparative and international education.

WM. REITZ

The contributions of Roman civilization to modern life.—An exceedingly worthwhile addition to books on the life of the Romans has appeared in the form of a "background history."¹ The scope of the volume is wider than that of its predecessors in the field. Its purpose is distinctly humanistic. The aims are threefold: to acknowledge the debt of modern life to the laws, literature, and customs of the ancient Romans; to describe the contributions of Roman civilization to modern culture; and to stimulate interest in the "Eternal City." The book is intended "especially for students of the literature and history of Rome" (p. vii). It may be used as a textbook or a work of reference in advanced classes. It pro-

¹ Grant Showerman, *Rome and the Romans: A Survey and Interpretation*. New York: Macmillan Co., 1931. Pp. xxii+644. \$2.40.

vides excellent supplementary material for courses in methods or in backgrounds taken by teachers of the classics, survey or orientation courses, and courses in Roman history, Roman religion, Roman private life, and Latin literature. Parts of the work may be used to advantage in senior high school, particularly by pupils studying the works of Cicero and, to some extent, by pupils studying the writings of Caesar. The book is not merely a textbook or reference book but a literary history, and as such it should be of interest, not only to students and teacher, but to the intelligent reading public.

There is a pleasant intermingling of the ancient and the modern, of the geographical, the historical, and the archaeological aspects of the city, of the physical and cultural elements which entered into the building of a great empire and a great people. In all phases of the work the author reveals his intimate knowledge of Latin literature and his insight into the life and thought of the people, derived both from study and from long residence in Italy as director of the summer session of the American Academy in Rome.

The main body of the book is divided into four parts. Part I, "Rome and Its Meaning," gives us in five chapters a picture of Italy today and of Rome today and yesterday. The last chapter in this section, "Ancient Rome and Modern Times," presents an exceptionally keen analysis of the indebtedness of our civilization to that of Rome. Part II, "The Roman," has nine chapters on everyday facts in the life of the Roman. In Part III, "Living Rome," twenty-two chapters are devoted to discussions of careers, such as "The Senator" and "The Lawyer." Part IV, "Greater Rome," describes in ten chapters the spread of Roman civilization, the Roman army, the Roman law, the coming of Christianity, and "Eternal Rome." Excellent biographical sketches of a few great Romans—Cicero, Caesar, Horace, Vergil, and Marcus Aurelius—are given. The chapters entitled "The Criminal," "The Roman Law," and "On the Southern Border" seem to the reviewer more technical and less interesting than others in the book. The chapter on "The Coming of Christianity" is most enjoyable reading, and "Eternal Rome," the final chapter, is an inspiring summary.

Following the main body of the book are four sections which may be classed as aids to study: "Chronology," "Books," "Annotations," and the Index. In "Annotations" references are given for each of the forty-six chapters, including many references to the classics themselves. Both in "Books" and in "Annotations" a lack of uniformity in titles of books is noted. The Index, in spite of the fact that it covers thirty-three pages, is somewhat incomplete. In a few instances entire topics have been omitted; in others, some page references have been omitted; in others, inaccurate references appear. Moreover, curious inconsistencies in form occur in this part of the work. For study purposes a pronouncing index would have been a valuable addition.

The book is well illustrated. The 165 photographs and 24 maps enable the reader to visualize clearly the material presented. The explanatory sentences or paragraphs given with the pictures—a feature deserving special mention—insure correct interpretation. A nine-page list of maps and illustrations shows

the sources of the pictures. Some of these are author's photographs, others are from the motion-picture film "Julius Caesar," and many are from books in the Macmillan Classical Series. It is unfortunate that in the last group the name of one of the three authors of the *Third Latin Book* is invariably omitted.

One of the most interesting features of the work is the constant drawing of parallels or contrasts between ancient and modern life, more specifically between Roman and American life. The method of contrast is employed effectively in the descriptions of the Pompeian house and of a modern home and in the accounts of the Roman day and of our day. Delightful parallels are drawn between the Roman career and the national career in American life, between the methods of the ancient and those of the modern office-seeker, between the apprenticeship in medical education in early times and the clinic and internship today, and in the use of the oath of Hippocrates for graduating medical students in ancient as well as in modern times. One rather startling comparison is suggested, that between the gladiatorial fight in the Colosseum and the "American national game" in "the million-dollar stadium" (pp. 349-50). Parallels with modern education occur in descriptions of character education and devices "to make instruction pleasant" (p. 94), and contrasts are afforded in the "apparatus of instruction" (p. 93), in memory work and studying aloud, in the number of holidays and the lack of summer vacation, and in the lack of a school system supported by the state. Modern parallels may easily be supplied for "the new-woman movement of ancient Rome" (p. 120); the "women who count the years by husbands instead of by consuls" (p. 121); the panic of A.D. 33, which was allayed "by the distribution of four million dollars of state funds among the banks" (p. 228); and the vast number of unemployed "receiving the dole of grain or its equivalent in Caesar's time" (p. 249). The style is interesting and, on the whole, rather simple, although parts of the book are necessarily technical.

Rome and the Romans differs from other studies mainly in its effort to delve beneath the surface. A definite endeavor has been made to do something more than describe institutions. The author has given the origin of the institutions, has explained and accounted for their growth. The material given in this book concerning the Roman man—not only his dress, his home, his occupations, and his amusements, but what he thought, what he enjoyed, and why he did things as he did—is vastly more inclusive than similar material given in preceding volumes of the kind. The author has given us not the bare husks of history but a vital narrative of a real people. He has not merely supplied us with a survey of facts about the nation but has enabled us to picture the life of the individual. He has opened up for us the entire panorama, the sweep of civilization, and has given us a perspective with which to interpret what we see.

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